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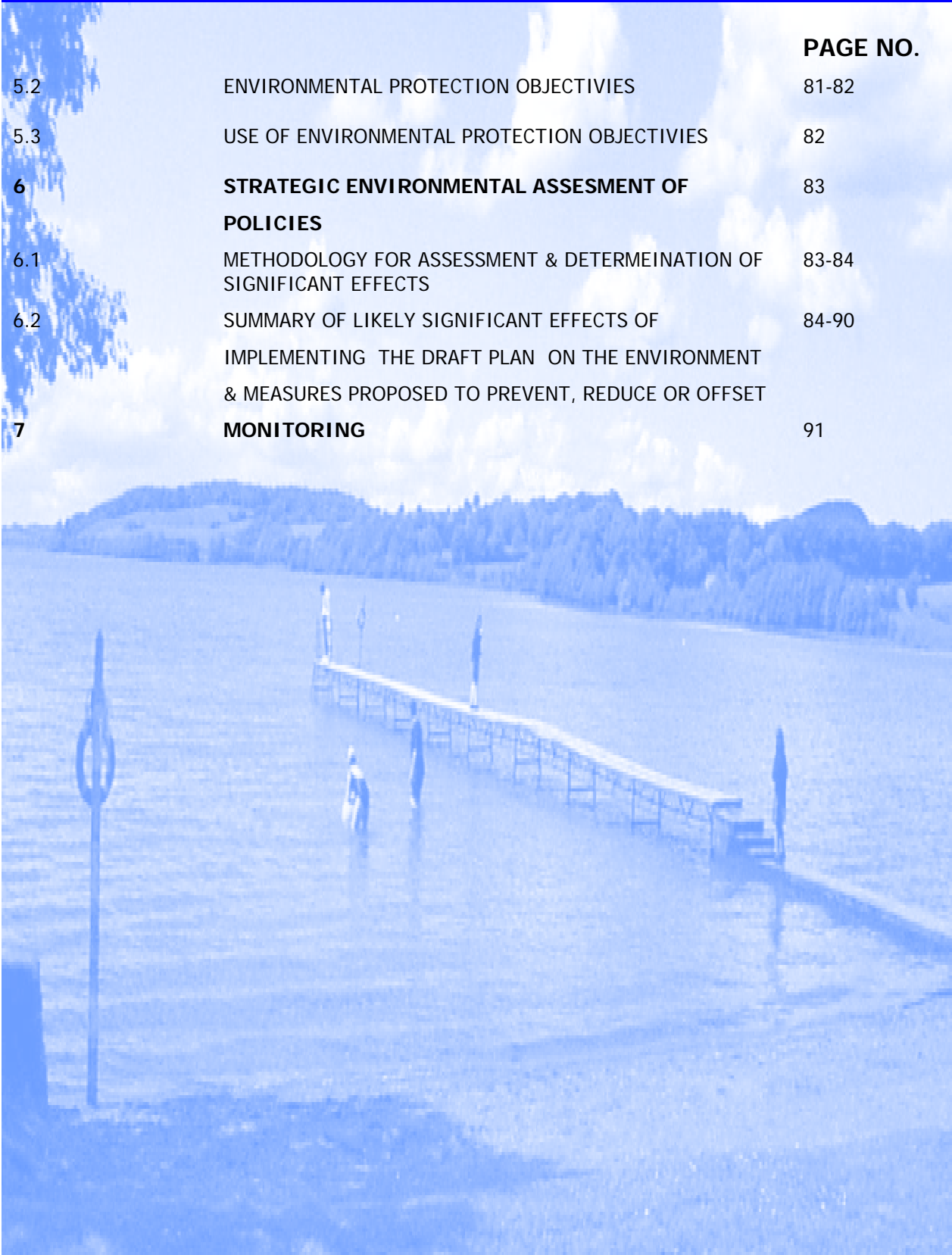
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**STRATEGIC ENVIRONMENTAL ASSESSMENT**

**ENVIRONMENTAL REPORT**

**FOR**

**WESTMEATH COUNTY DEVELOPMENT PLAN 2008-2014**





# **1 NON-TECHNICAL SUMMARY**

## **1.1 INTRODUCTION**

Strategic Environmental Assessment (SEA) is a formal process that is being carried out in parallel with the County Development Plan review process. It is a valuable tool that has influenced decision-making at each stage in the CDP review process; to improve the environmental sustainability of the new Plan and to raise awareness of the potential environmental consequences of its implementation so that these consequences may be mitigated or avoided altogether. It also gives the public and other interested parties an opportunity to comment and to be kept informed on decisions that may impact on the environment and how they were made.

As part of the SEA process it is necessary to consult with various individuals and agencies to ensure that the process is meaningful. In line with the Plan review processes, the public have been consulted in order to help ascertain the significant environmental issues relevant to Westmeath. In accordance with the legislation, a 'scoping' exercise has also been carried out to determine the range of environmental issues and level of detail to be contained in the Environmental Report. This involved consultation with the relevant Environmental Authorities:

- The Environmental Protection Agency
- The Department of the Environment, Heritage and Local Government
- The Department of Communications, Marine and Natural Resources

A cross-departmental SEA Steering Group was also used in carrying out the SEA process, which provided advice and expertise and assisted in the determination of significance of effects and mitigation and monitoring measures.

The main output of SEA is the Environmental Report, which outlines the findings of the assessment process. This is the Environmental Report for the Westmeath County Development Plan 2008-2014 and has been prepared in accordance with the Planning and Development (Strategic Environmental Assessment) Regulations 2004. This report should be read in conjunction with the County Development Plan.

## **1.2 CONTENTS AND MAIN OBJECTIVES OF THE PLAN**

A comprehensive range of strategic development goals for the County are set out in the Plan, which aim to:

- Ensure that everyone has equity in the development of the County and the opportunities to benefit from its economic, social, cultural and environmental progress.
- Recognise the largely rural character of the County.
- Ensure that everyone has the opportunity of obtaining affordable housing, can enjoy safe and accessible environments, have access to jobs, education and training, community services and recreational facilities, arts and culture.
- Ensure that quality underpins all forms of development, and 'design-led' solutions are applied. Develop and maintain a sense of place and local distinctiveness in established and newly developed areas. That the vitality and character of established town and village centres are maintained. Ensure the cohesive and coherent development of existing and proposed settlements.
- Protect, maintain and enhance the quality of the natural environment, protect the unique character of Westmeath landscapes and conserve its open spaces and visual amenity.

- Recognise that Westmeath's archaeological, natural and built heritages are important elements in the long-term economic development of the county and to promote their conservation and enhancement, public access and enjoyment.
- Revitalise run-down or underdeveloped parts of the County and ensure that redevelopment contributes to meeting the needs of the existing community, not exclude or isolate them.
- Realise the opportunities which Westmeath's location open up as a regional and national centre of trade, business and tourism; to promote employment growth and economic activity; to widen and diversify the economic base; and to channel growth towards the regeneration of less developed areas of the County.
- To work in partnership with Athlone Town council and Offaly Co. co. to ensure that the linked Gateway, Athlone-Tullamore-Mullingar, will achieve the critical mass of population, services and infrastructure, and complementary strengths and attractions to enable the centres to fulfil their combined role as centres for growth, in accordance with National and Regional strategies.
- To promote tourism, diversify its base as a development agent in the regeneration of the County's economy in ways that do not have an adverse effect upon local communities or the environment, and ensure that the County becomes a "go see" as opposed to a "pass through" location.
- Contribute to a sustainable environment by encouraging the development of buildings of all types that are environmentally efficient to build and run, and which contribute to the "greening" of the County according to the principles of Local Agenda 21.

The Westmeath County Development Plan and accompanying Environmental Report are situated within a hierarchy of strategic actions, policy and guidance; higher-level strategic actions constrain the County Development Plan while the County Development Plan in turn, constrains lower strategic actions. As required in the legislation, the County Development Plan shall, so far as is practical, be consistent with national and regional plans, policies and strategies, and any guidelines issued by the Minister of the Environment Heritage and Local Government, which relate to the proper planning and sustainable development of the area covered by the Plan.

### **1.3 CURRENT STATE OF THE ENVIRONMENT**

#### **1.3.1 Landscape and Amenity**

Westmeath has a variety of landscapes but the most prominent one can be described as a "undulating pattern of low hills, patches of woodland and bog, with many lakes nestling in shallow valleys". In general, the areas of greatest scenic merit, such as Westmeath's lakelands are also the areas of greatest nature value and are also the areas that attract visitors in numbers. Specific places from which views of exceptional importance may be enjoyed, have been identified in the County Development Plan for protection; and these include views across Lough Ree, at Uisneach, from Knockastia, Coolatore, around each of the lakeland areas and from the N6 towards the Eskers near Tyrellspass. Having regard to their amenity and recreational potential, a number of areas are designated as Areas of High Amenity, which are afforded a degree of protection from development that may harm their amenity value. The Landscape Character Assessment which is part of the Plan will assist in landscape protection.

#### **1.3.2 Population and Human Health**

The level of environmental public health protection is high, especially since the threat from infectious diseases has largely diminished due to successful immunisation programmes and improved diet, housing and general living conditions. Ireland's temperate climate is a contributory factor in reducing risks to public health, especially in terms of infectious diseases and sun exposure.

Human Health issues for Westmeath are therefore primarily concerned with the quality of drinking water and air quality and also to the quality of life of Westmeath's citizens, which can be affected by factors such as commuting patterns and the provision for recreation and amenity in the County.

Rapid population growth in recent years has resulted in increasing pressure for housing and services, such as wastewater treatment, social and educational facilities and transport facilities. Pressure for development in rural areas is increasing, placing added pressure on landscape and water resources, in addition to increasing unsustainable transport trends with increased reliance on the private car.

### **1.3.3 Water Resources**

The EU Water framework Directive came into force in December 2000 and aims to achieve at least 'good status' for all waters by 2015 and will specify water quality targets to be implemented. The catchment-based approach to water quality is enshrined in the Directive and Member States are required to develop River Basin District Management Plans by 2009.

Pressures on water quality are predominantly due to agricultural activity, development in areas where groundwater is vulnerable, too many or poorly sited and maintained septic tank systems and industrial development causing pollution.

Lough Owel is the main public water supply for the County and as such is considered vulnerable. Westmeath County Council are also obliged to supply water to the canal from this source. Lough Ennell has been vulnerable due to wastewater capacity issues. Lough Lene is in good condition and due to its importance as a water supply source and as a bathing water it is considered important to maintain its quality. Lough Ree is significantly at risk of pollution as is Lough Sheelin and Lough Derravarragh.

River channels in the Boyne Catchment are salmonoid and as such their quality needs to be preserved. The River Brosna has been identified as one that is at risk of deterioration, along with parts of the river Inny, the Yellow River, the Dungolman and the Shannon River.

Water supply infrastructure and its capacity and condition is an issue; it is estimated that currently there is a 40% level of water leakage. This issue is being addressed through checking for leaks and the replacement of infrastructure.

Wastewater infrastructure and its capacity is also an issue that is impacting on water quality. This problem will be exacerbated if strategic settlement planning is not reflected in appropriate capacity. Capacity problems exist due to storm water runoff into the town systems. There is a need to upgrade drainage systems in some areas. Small-scale settlement policies will result in pressures on the provision of wastewater services. Growth of Mullingar is required by national policy but the issue of wastewater treatment capacity to support this growth must be addressed on an ongoing basis.

Groundwater is an important resource; for drinking water and also due to the fact that it feeds a significant portion of surface water bodies so its quality affects that of surface water bodies. Areas where groundwater is extremely or highly vulnerable have been highlighted through the recently available interim data from the Geological Survey of Ireland as part of their preparation of a Groundwater Protection Scheme for the County.

A number of measures are in place to prevent and control pollution of ground waters, such as agricultural bye-laws, and enforcement under the Water Pollution Act. Measures will be strengthened and increased with the adoption of River Basin District Management Plans under the Water Framework Directive in 2008.

The use of jet-skis have resulted in pressure in terms of water pollution, impact on fish life, noise disturbance etc. and although bye-laws have been adopted to prohibit their use, these do not apply to Lough Ree, potentially placing increased pressure on this lake that is already at risk from pollution sources.

Loughs Ennell, Owel, and Sheelin are important and renowned wild brown trout fisheries that attracts tourist anglers from both within and outside Ireland. Lough Derravarragh was managed as a brown trout fishery up to the 1970's. Lough Sheelin and Lough Ennell are amongst the twelve lakes in Western Europe capable of supporting stocks of large brown trout. Lough Sheelin is known for its duckfly and mayfly hatch, whilst Lough Ennell produced the Irish record lough trout and is noted for its game angling. Loughs Owel, Derraghvarragh and Sheelin also support stocks of course fish. Fish need unpolluted water and abundant food supplies in a habitat that provides spawning areas, shelter and freedom of movement and it is important that these needs are not affected by development.

#### **1.3.4 Air Quality and Climate**

Overall air quality in the region of Westmeath is within EU limits and periodic monitoring is carried out by the Environmental Protection Agency. However in urban areas in particular, levels of air pollution occasionally exceeds EU limits and this is of concern, due mainly to increased car traffic.

The effect of global warming is increasing the incidence and severity of flooding and it is therefore increasingly important to take account of flood risk in spatial planning.

#### **1.3.5 Geology, Soil and Material assets**

Material assets include surface and groundwater resources, esker systems with geodiversity and biodiversity value, bogs and fens, watercourses and other features of amenity value, transportation and other physical infrastructure, social and community facilities and services, our scenic landscape and features of natural and cultural heritage, such as buildings and sites of historical, architectural or archaeological value and habitats and species of note. These assets are valuable to local communities and to visitors alike and it is essential that we ensure that they are managed in a sustainable manner so that their value is not lost. The Westmeath esker systems have been identified in particular as valuable material assets from their geodiversity, biodiversity and educational value.

#### **1.3.6 Biodiversity, Flora and Fauna**

Biodiversity can be defined as the variability among living organisms including terrestrial and aquatic ecosystems. The loss of biodiversity reduces an ecosystem's ability to recover from natural or human impacts. Biodiversity can include diversity within species, between species and of ecosystems and is often discussed under the headings habitats and species.

In Ireland there are a number of categories of protected areas for the conservation and protection of flora and fauna. Sites of International Importance include; candidate Special Areas of Conservation (cSACs) protected under the EU Habitats Directive (92/43/EEC), established for the conservation of natural and semi-natural habitats and species of flora and fauna and; Special Protection Areas (SPAs) for the protection of birds established under the Birds Directive of the EU in 1979. Sites of national importance are proposed Natural Heritage Areas (pNHAs) and are designated under the Wildlife (Amendment) Act 2000.

In addition to the protected sites referred to biodiversity also includes species, habitats and ecosystems, which are not designated.

The eskers in the area of County Westmeath provide wonderful and unique scientific examples, which offer exceptional aesthetic, recreational and educational value. Further from this, the sites are important geologically, archaeologically, historically, culturally and ecologically. They are therefore considered highly sensitive to injurious forms of development.

Ireland is the most important country in Europe for peatlands and county Westmeath has 15 peatlands designated for conservation. Peatlands of natural heritage and habitat value include raised bogs and fens. Peat extraction and associated drainage has been the biggest cause of loss of peatland habitat. Industrial peat harvesting is the biggest factor. Other threats include afforestation and illegal dumping.

The Shannon Callows, on the floodplain of the River Shannon south of Athlone town, is a unique wetland resource in the Irish Midlands of international importance and has been afforded EU Designations in this regard. This large expanse of shallow water welcomes thousands of wintering waterfowl and waders every year, including Whooper Swan, Bewick's Swan, Wigeon, Golden Plover, Lapwing and Black-tailed Godwit.

#### **1.3.7 Cultural Heritage**

Westmeath has a rich and diverse archaeological heritage, the Hill of Uisneach for example is identified as one of the most importance archaeological sites and is of national importance. The richness of archaeological and historical remains, together with the attractive landscape can also be found at Fore Village.

The Built Heritage of Westmeath is special and unique, and includes not only works of great artistic and structural achievements but also everyday items, which have been produced by skilled craftsmen of bygone days. Many structures and groups of structures of value throughout the County have been afforded protection through inclusion on the Record of Protected Structures or in Architectural Conservation Areas. The recently published National Inventory of Architectural Heritage will be an important resource for listing further structures for protection.

## **1.4 EXISTING ENVIRONMENTAL ISSUES**

In summary, environmental pressures on the County relate to surface water quality and ground water quality and the impacts of agriculture, industry, on-site wastewater treatment systems and public wastewater treatment, capacity of wastewater treatment provision for increasing development on these resources; landscape impacts from development; tourism related development and tourist activity; biodiversity and habitat protection; flood risk, increased use of the private car impacting on air quality and quality of life.

## **1.5 CONSIDERATION OF ALTERNATIVE STRATEGIES**

It is required in the legislation that the Environmental Report must consider reasonable alternative strategies that the Development Plan could follow before deciding on the preferred option. Following the consideration of a variety of settlement options and policy directions a preferred strategy was decided upon to be taken by the Plan as the most environmentally sustainable.

Details of the consideration of alternative strategies are given in more detail in the main body of the Environmental Report.

## **1.6 ENVIRONMENTAL PROTECTION OBJECTIVES**

The Environmental Protection Objectives provide a standard against which the goals, policies and objectives of the County Development Plan can be measured in order to highlight those with the potential for environmental impact. They are as follows:

### **1.6.1 Biodiversity, Flora and Fauna**

- B1: Conserve and promote the diversity of habitats and species
- B2: Protect, conserve and enhance habitats, species and areas of national or international importance, including aquatic habitats and species and promote the sustainable management of habitat networks

### **1.6.2 Population and Human Health**

- P1: Facilitate a high quality of life for Westmeath's population through ensuring high quality residential, recreational and working environments, encouraging sustainable transport patterns and minimising noise pollution

### **1.6.3 Water Resources**

- W1: Promote water conservation and sustainable water use based on long-term projections of available water resources
- W2: Protect the quality of surface and ground waters as sources of drinking water and as valuable assets for amenity and recreation
- W3: Achieve and maintain required water quality standards and reduce discharges of pollutants or contaminants to waters



#### **1.6.4 Soil and Material Assets**

- S1: Maximise the use of brownfield lands and the existing built environment to reduce the need to develop greenfield lands
- S2: Promote the principles of 'reduce, reuse, recycle' to minimise the amount of waste to landfill
- S3: Maintain the quality of and access to assets such as aquifers, aggregates, motorways, open spaces, water courses and all other physical and social infrastructure
- S4: Avoid flood risk in selecting sites for development and mitigate the effects of floods

#### **1.6.5 Cultural Heritage and Landscape**

- C1: Protect and conserve the integrity and setting of features of architectural and archaeological heritage and identify other features of merit for protection where appropriate
- C2: Conserve and enhance valued natural and historic landscape features
- C3: Enhance landscape and townscape quality and minimise negative visual impacts from development
- C4: Protect and enhance the quality, character and features of waterways
- C5: Protect and conserve the quality, character and distinctiveness of geological and geomorphological systems, sites and features

#### **1.6.6 Air and Climatic Factors**

- A1: Reduce the need to travel by private car
- A2: Minimise emission of greenhouse gases to contribute to a reduction and avoidance of human induced global climate change
- A3: Encourage energy efficiency in building design and maximise the use of renewable energy forms
- A4: Reduce all forms of air pollution and promote tree planting where appropriate

### **1.7 LIKELY SIGNIFICANT EFFECTS ON THE ENVIRONMENT OF IMPLEMENTING THE COUNTY DEVELOPMENT PLAN AND MITIGATION MEASURES**

The full matrix and assessment of policies against environmental objectives is included in Appendix One of the Environmental Report.

Since the SEA process was intended to inform policy as it is created, the Plan policies were formulated in accordance with the findings of the SEA process and as a result they are for the most part already environmentally sustainable.

In summary, the main significant issues that were raised and offsetting or mitigation measures to deal with these issues are as follows:

#### **1.7.1 Biodiversity**

##### **Service Areas for N6**

Policy 'to co-operate with the National Roads Authority to identify the need for service areas for motorists along the route of the N6 dual carriageway and to implement proposals for provision'. Depending on the location of the service areas this could result in a significant impact to biodiversity, flora and fauna and potentially to habitats and species, such as intact bog to the east of Athlone, hedgerows and other habitats.

To offset this potentially significant impact, a policy was included to ensure that any such development should not damage habitats or species of value and should be developed with minimal

impact to biodiversity, flora and fauna. Major infrastructural and motorway-related developments should reflect the local biodiversity value within which they are sited, using screening and planting with native species of local provenance and design should respect the landscape character.

### **1.7.2 Air Quality**

#### **Settlement Strategy**

Settlement strategy Tiers 3 and 4 in particular will allow for population growth in areas with a limited employment base and minimal provision for public transport use. This will increase the need to travel by private car, conflicting with Strategic Environmental Objective A1.

In addition, policies to support rural enterprise and rural-based tourism industries will result in an increased need to travel to such areas without the option of sustainable modes of transport.

An objective was included to explore options to increase provision for public transport services in rural areas and to support developments of the rural bus initiative and any other sustainable transport initiatives.

#### **Development along National Routes**

"To restrict development accessing national routes in cooperation with the NRA" This policy restricts development with a direct access point onto a national route. This would not necessarily control development that would have an impact on the national route such as development at interchanges; permitting such development could affect the carrying capacity, safety and efficiency of the national road network and could result in backed up traffic and associated negative environmental implications of air pollution.

To mitigate against such affects the planning authority will manage development with strict accord to implementation of its retail strategy and settlement policies, which aim to prevent development at inappropriate locations.

#### **Zoning of excess land for residential use in Delvin and Clonmellon**

- Existing zoning in Delvin allows for a provision of an additional population of 2431 people, potentially bringing the population of this village to in excess of 2789 + people by 2014 if all this land were to be developed within the period of the plan.
- Existing zoning in Clonmellon allows for a provision of an additional population of 919 people, potentially bringing the population to in excess of 1610 + people by 2014.

Provision for this scale of population growth in such a short space of time without employment and public transport would potentially have a wide range of significant environmental effects, depending on the scale of development, such as negative impacts to air quality through increasing the need to travel by private car, population and human health due to unsustainable transport patterns encouraged, impacts to townscape quality with rapid change and to landscape and biodiversity with rapid development of greenfield lands.

Since the issues raised are considered potentially highly significant and cumulative, long term, permanent, negative impacts could occur, it was not possible to propose realistic mitigation measures. More appropriately, the SEA process recommends that excess residentially zoned land in Delvin and Clonmellon should be de-zoned in the County Development Plan 2008-2014, to ensure the logical and sustainable development of these areas.

### **1.7.3 Water Quality**

#### **Wastewater Treatment Capacity Issues**

Population growth projected for Mullingar in particular, will place increasing pressure on the sewerage treatment systems and this, in turn would increase the vulnerability of Lough Ennell and the River Brosna to pollution. To address this situation a new Mullingar Sewerage Treatment Plant and 1st Phase of Network Improvement will be in place by the end of 2008.

## **Unserviced Settlements**

The 'Unserviced Settlement' policy aims to direct rural residential development in a sustainable pattern, concentrating development in designated centres, to sustain rural communities and rural facilities such as schools and shops and to cater for the demand for single site housing in a rural setting.

The proposed unserviced settlements are as follows:

- Athlone Area; Baylin, Castledaly, Toberclaive, Ballynahown,
- Coole Area; Streete, Crookedwood, Drumcree, Castletown-Finnea, Lismacaffrey, Archerstown
- Kilbeggan Area; Loughnavalley, Dysart, Moyvore, Mount Temple, Tang, Horseleap, Streamstown
- Mullingar Area; the Downs, Rathconrath, Taghman, Gainstown, Ballinea and Milltown

Interim data in relation to the vulnerability of groundwater to pollution in the county has recently become available from the Geological Survey of Ireland as part of their preparation of a Groundwater Protection Scheme for the County. This information shows areas in the county that are classed as 'extremely' or 'highly' vulnerable to groundwater pollution. Some of the proposed unserviced settlements are located within these vulnerable areas.

Since the issues raised are considered potentially highly significant and cumulative, long term, permanent, negative impacts are likely, based on most recent information available; it was not possible to propose realistic mitigation measures. More appropriately, the SEA process recommends that the following settlements be removed from the unserviced settlement policy in the CDP:

- Settlements located in areas of 'extreme' groundwater vulnerability: Crookedwood, Taghmon, Tang, Loughnavalley and Mount Temple
- Settlements located in areas of 'high' groundwater vulnerability: Castletown-Finnea, Horseleap, Streamstown, and Baylin.

The reason for this recommendation is that locating a number of new houses in a vulnerable area for groundwaters, without water and wastewater treatment services and using on-site wastewater treatment systems instead, will have a cumulative effect of significantly increased risk of groundwater pollution and potential impacts to public health as a result.

## **Rural Housing Policy**

One-off rural housing raises a number of environmental concerns and if it is not 'rural generated'; necessary to sustain rural communities and economies, it can be considered unsustainable. These environmental concerns include:

- a) Where occupiers of rural housing are working, being educated or connecting with family in urban areas or elsewhere, extra trips are generated, resulting in a reliance on the private car and unsustainable transport patterns. The cumulative impact of such development will be the excessive emissions of greenhouse gases, which is contrary to our obligations under the Kyoto agreement.
- b) Individual rural houses that are poorly sited and screened or located in sensitive or exposed environments or landscapes will negatively impact on the quality of the area. Cumulatively a large volume of rural housing development over time, however sensitively sited will impact visually upon landscape and natural amenity.
- c) Single rural houses that rely on septic tank systems for on-site wastewater treatment can place surface and ground water resources under a significant risk of pollution and will be particularly harmful if located in areas of groundwater vulnerability.

The Sustainable Rural Housing Guidelines (2005) issued by the DoEHLG advise on the type of housing development that should be considered as rural generated; which should take account of the scope and extent of the housing needs to be considered in the area – whether beside a large town or more

removed from such a centre; the categories of persons the guidelines cite as comprising rural generated are those who are an intrinsic part of the rural community e.g., have lived for substantial periods of their lives in the area as members of the established rural community; or persons working full-time or part-time in the rural area e.g., in farming or natural resource related occupations or teaching in a rural school.

The Development Plan policy allows for persons in the following categories:

1. Persons who are actively engaged in agriculture, horticulture, forestry, bloodstock and peat industry.
2. Members of farm families seeking to build on the family farm.
3. Landowners and members of landowners' families (landowner for this purpose being defined as persons who owned the land in question at the date of adoption of the draft County Development Plan 2000).
4. Persons employed locally whose employment would provide a service to the Local Community.
5. Persons who have close personal, family or economic ties within the area, including returning emigrants.

Category five extends the categories beyond the Guidelines range by allowing for persons who have undefined 'close personal, family or economic ties' within the rural area. While, the Guidelines represent policy taken at a higher level and therefore are more appropriately dealt with at that higher level, the extension of the categories of qualifying persons beyond the guidelines must be considered in this SEA.

Since the 'ties' and what constitutes 'close' within the rural area remain undefined, this category could be loosely applied and rural housing that is not necessary to sustain rural communities and economies, which is therefore unsustainable, may be permissible. This will exacerbate environmental impacts in relation to the cumulative effects of rural housing, making such impacts significant.

Since the issues raised are considered potentially highly significant and cumulative, long term, permanent, negative impacts could occur; it was not possible to propose realistic mitigation measures. More appropriately, the SEA process recommends that category five of the proposed policy be amended to:

5. "Other persons who can demonstrate that they are an intrinsic part of the rural community in accordance with the Sustainable Rural Housing Guidelines, 2005"

## **1.8 MONITORING PROPOSALS**

Measures were proposed as part of this SEA process to monitor the effects on the environment of implementing the County Development Plan and these are presented in the Environmental Report in terms of the achievement of the environmental protection objectives and the impact on the environmental factors that the SEA legislation requires to be considered. Measurable indicators are included and targets are set.

Monitoring for SEA will be carried out as part of the overall monitoring of implementation of the County Development Plan, as required two years after adoption of the Plan.

## **2 INTRODUCTION**

### **2.1 BACKGROUND**

Article 1 of the European SEA Directive (2001/42/EC) states; "the objective of this Directive is to provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development...." This Directive was adopted into Irish Legislation on the 21st of July 2004 by the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations, S.I. No. 435 of 2004 and the Planning and Development (Strategic Environmental Assessment) Regulations 2004 (S.I. No. 436 of 2004). Certain plans and programmes prepared by statutory bodies and which are likely to have a significant impact on the environment now require an SEA to be carried out, where the preparation of such plans and programmes is started after that date.

The two-year review process of the Westmeath County Development Plan commenced on the 25th March 2006. As part of and in conjunction with the timeframes of the Development Plan Review processes, a Strategic Environmental Assessment of the likely significant effects of implementing each new Development Plan must be carried out, in accordance with above legislation.

### **2.2 STRATEGIC ENVIRONMENTAL ASSESSMENT**

Strategic Environmental Assessment (SEA) is defined as 'the formal, systematic and comprehensive process of evaluating the effects of a proposed policy, plan or programme or its alternatives, including the written report on the findings of that evaluation, and using the findings in publicly accountable decision making'.

SEA is a process for evaluating at the earliest appropriate stage, the environmental quality, and potential consequences, of policies, plans or programmes and to ensure that any potential consequences are assessed during their preparation and before they are adopted. Its overall purpose is to contribute to sustainable development. SEA is intended to provide a framework for influencing decision-making at an early stage; to improve the environmental sustainability of the new Plan and to raise awareness of the potential environmental consequences of its implementation so that these consequences may be mitigated or avoided altogether. It also gives the public and other interested parties an opportunity to comment and to be kept informed on decisions that may impact on the environment and how they were made.

The SEA process includes the following outputs:

- An Environmental Report (a report containing the findings of the SEA) on the likely significant effects of implementing the Draft Development Plan.
- Scoping Report – stating how the scoping responses of the environmental authorities were taken account of in preparing the Environmental Report
- An SEA Statement (identifying how environmental considerations and consultation have been integrated into the County Development Plan 2008-2014).

This is the Environmental Report for the Westmeath County Development Plan 2008-2014 and has been carried out with in accordance with Schedule 2B of S.I. 436 of 2004, which sets out the information that is required to be included in SEA Environmental Reports. This report should be read in conjunction with the County Development Plan.



## **2.3 THE CONTENTS AND MAIN OBJECTIVES OF THE COUNTY DEVELOPMENT PLAN**

### **2.3.1 Contents and Main Objectives of Plan**

A comprehensive range of strategic development goals for the County are set out in the Plan, which aim to:

- Ensure that everyone has equity in the development of the County and the opportunities to benefit from its economic, social, cultural and environmental progress.
- Recognise the largely rural character of the County.
- Ensure that everyone has the opportunity of obtaining affordable housing, can enjoy safe and accessible environments, have access to jobs, education and training, community services and recreational facilities, arts and culture.
- Ensure that quality underpins all forms of development, and 'design-led' solutions are applied. Develop and maintain a sense of place and local distinctiveness in established and newly developed areas. That the vitality and character of established town and village centres are maintained. Ensure the cohesive and coherent development of existing and proposed settlements.
- Protect, maintain and enhance the quality of the natural environment, protect the unique character of Westmeath landscapes and conserve its open spaces and visual amenity.
- Recognise that Westmeath's archaeological, natural and built heritages are important elements in the long-term economic development of the county and to promote their conservation and enhancement, public access and enjoyment.
- Revitalise run-down or underdeveloped parts of the County and ensure that redevelopment contributes to meeting the needs of the existing community, not exclude or isolate them.
- Realise the opportunities which Westmeath's location open up as a regional and national centre of trade, business and tourism; to promote employment growth and economic activity; to widen and diversify the economic base; and to channel growth towards the regeneration of less developed areas of the County.
- To work in partnership with Athlone Town council and Offaly Co. co. to ensure that the linked Gateway, Athlone-Tullamore-Mullingar, will achieve the critical mass of population, services and infrastructure, and complementary strengths and attractions to enable the centres to fulfil their combined role as centres for growth, in accordance with National and Regional strategies.
- To promote tourism, diversify its base as a development agent in the regeneration of the County's economy in ways that do not have an adverse effect upon local communities or the environment, and ensure that the County becomes a "go see" as opposed to a "pass through" location.
- Contribute to a sustainable environment by encouraging the development of buildings of all types that are environmentally efficient to build and run, and which contribute to the "greening" of the County according to the principles of Local Agenda 21.

## **2.4 RELATIONSHIP OF THE PLAN WITH OTHER RELEVANT PLANS.**

### **2.4.1 Introduction - Hierarchy of Strategic Actions**

The Westmeath County Development Plan and accompanying Environmental Report are situated within a hierarchy of strategic actions, policy and guidance; higher-level strategic actions constrain the County Development Plan while the County Development Plan in turn, constrains lower strategic actions. In accordance with the SEA legislation in this regard, the environmental report includes the information that may reasonably be required taking into account a number of factors, one of which is "the extent to which certain matters are more appropriately assessed at different levels in the decision-making process in order to avoid duplication of environmental assessment". In accordance

with this provision, potential environmental impacts that arise from the implementation of policies and objectives where dictated by higher-level policy, and cannot be assessed in this SEA.

Furthermore, certain objectives are more site-specific than strategic, such as those that seek to provide strategic infrastructure. Where such situations arise, they will undergo appropriate assessment for their impacts through a more appropriate appraisal, such as EIA or SEA of a lower-level Plan (Local Area Plan). The Planning Authority has a statutory obligation to carry out SEA screening of some Local Area Plans. Where deemed to be mandatory or necessary, the Planning Authority will engage in the SEA process in the course of reviewing/drafting policy for Local Area Plans.

As required in the legislation, the County Development Plan (and accompanying Environmental Report) shall, so far as is practical, be consistent with national and regional plans, policies and strategies, and any guidelines issued by the Minister of the Environment Heritage and Local Government, which relate to the proper planning and sustainable development of the area covered by the Plan. Ireland has ratified a range of International Agreements in relation to our environment; such Agreements place legal obligations on the State in relation to the conservation and management of designated heritage sites and species and the maintenance of prescribed standards of environmental quality. Relevant policy and guidance from regional, national and international levels are outlined in the following sections.

#### **2.4.2 Regional Policy and Guidance**

##### **Midland Regional Planning Guidelines, 2004**

This document has been prepared to implement the National Spatial Strategy in the Midlands region. This is to be achieved through developing the full potential of rural areas in the region in a manner that is compatible with the strengthening of the urban structure of the region, while ensuring a high quality living environment that is rich in heritage and landscape value. The RPGs also acknowledge the environmental advantages of the Midlands in creating better quality life and promoting economic growth.

##### **Midlands Waste Management Plan 2005-2010**

The Midlands Waste Management Plan sets out a programme for the provision of waste infrastructure for the region, based on the waste hierarchy of prevention, reuse, recycling and energy recovery ahead of landfill, utilizing principles such as the 'polluter pays' and 'proximity' principle.

#### **2.4.3 National Policy and Guidance**

##### **Sustainable Development: A Strategy for Ireland, 1997**

This aims for the development of the regions of Ireland to their full potential within a well-protected environment, without compromising the quality of that environment, and with responsibility towards present and future generations.

##### **Making Ireland's Development Sustainable, 2002**

The report examines the progress made in the ten years since the Rio de Janeiro Earth Summit. The main issues addressed are: eutrophication of inland waters; increases in the amounts of waste; the urban environment; the impacts of settlement patterns; the need to reduce emissions of greenhouse gases; and depletion of natural resources and threats to biodiversity.

##### **National Spatial Strategy, 2002**

In accordance with this 20-year strategy, which aims to achieve more balanced regional development, all development must have economic, social and environmental dimensions, to contribute to a better quality of life. The NSS highlights that environmental quality is a key ingredient in the potential of the Country as a whole, and that it must be carefully managed to avoid erosion of its potential.

### **National Climate Change Strategy, 2000**

This strategy sets out a ten-year framework for achieving the necessary reductions in greenhouse gas emissions to ensure that Ireland complies with the Kyoto Protocol. Local traffic management measures and significant investment in transport infrastructure are identified as measures that will help to limit emissions. Changes to the building regulations to reduce energy requirements are also proposed.

### **OPW Guidelines on Flood Risk, 2005**

The Office of Public Works has issued guidance for Planning Authorities on flood risk, which state, in terms of location, that development that is sensitive to the effects of flooding would generally not be permitted in flood - prone or marginal areas. The guidance also states that appropriately designed development, which is not sensitive to the effects of flooding, must not reduce the flood plain or otherwise restrict flow across floodplains. Development consisting of construction of embankments, wide bridge piers, or similar structures should not normally be permitted in or across flood plains or river channels.

The guidance states that development must incorporate the maximum provision to reduce the rate and quantity of runoff and developments must be set back from the edge of the watercourse to allow access for channel clearing/maintenance. In addition, developments must be constructed to meet specific minimum flood design standards and that flood impact assessment must accompany certain applications.

### **SR 6:1991**

Septic tank systems (Recommendation for Domestic Effluent Treatment and Disposal from Single Dwelling Houses), N.S.A.I. 1991 sets out standards for percolation tests, water table tests and minimum distances for a septic tank and percolation area from site boundaries, houses wells etc.

### **EPA Wastewater Treatment Manual, 2000**

Treatment Systems for Single Houses, EPA 2000. This document sets out more detailed site analysis and tests. It describes how unsuitable sites can be improved for effluent disposal and it sets out distance requirements for percolation areas and minimum site sizes which are less than SR6.

### **Local Government (Water Pollution) Acts, 1977 and 1990**

This Act and associated regulations set out quality standards for Phosphorus in surface waters, particularly rivers and lakes and makes other provisions for the protection of watercourses. The Phosphorus Regulations require that water quality be maintained or improved by reference to the baseline biological quality rating (rivers) or trophic status (lakes) assigned by the EPA. Section 4 of the 1977 Act – 'Licensing of trade and sewage effluents' and Section 16 – 'Licensing of discharges to sewers' give measures for controlling the level of pollutants entering water

### **Water Quality (Dangerous Substances) Regulations 2001.**

These Regulations give effect to the Dangerous Substances Directive 76/464/EC and the Water Framework Directive 2000/60/EC. They prescribe water quality standards and aim to ensure that, in relation to a substance present, where the existing condition of a water body does not meet a specific standard there shall be no disimprovement in the condition of the water body.

### **Air Pollution Act, 1987**

This Act defines air pollution and enables Local Authorities to require measures to be taken to prevent or limit pollution.

### **Noise Regulations 1994**

These regulations, relating to the 1992 EPA Act, simplify and strengthen the procedures for dealing with noise nuisance, and give Local Authorities power to take action when they consider that it is necessary to do so in order to prevent or limit noise.

### **Changing our Ways, 1998**

This policy statement on waste management is addressed chiefly to local authorities, and is intended to provide a national policy framework for the adoption and implementation by local authorities of strategic waste management plans under which national objectives and targets will be attained.

It outlines the Government's policy objectives in relation to waste management, and suggests some key issues and considerations that must be addressed in order to achieve these objectives. In particular, it focuses on the need to give clear and practical expression to the requirements of the waste hierarchy, by developing and pursuing integrated solutions, which combine progressive policies with a sustainable and cost effective waste infrastructure.

The policy was expanded in two related documents: Preventing and Recycling Waste: Delivering change (2002) and Taking Stock and moving forward (2004).

### **National Heritage Plan (2002)**

This is a five-year action plan, which set out the Government's strategy in relation to the conservation and management of our heritage over the period 2002 – 2007 as an important part of sustainable development. The Government Policy Statement on Heritage as contained in the Plan, states "it is an objective of Government to ensure the protection of our heritage and to promote its enjoyment by all. A key factor of the Plan is the enhanced role for local authorities in heritage awareness and management, to be given effect through the preparation and implementation of Local Heritage Plans.

### **Convention on Biological Diversity and the National Biodiversity Plan (2002)**

The National Biodiversity Plan 2002 was prepared in response to Article 6 of the Convention on Biological Diversity. This plan "pays special attention to the need for the integration of the conservation and sustainable use of biological diversity into all relevant sectors. The full and effective integration of biodiversity concerns into the development and implementation of other policies legislation and programmes is of crucial importance if the conservation and sustainable use of biodiversity is to be achieved".

### **Framework and Principles for the Protection of the Archaeological Heritage, 1999**

This document sets out for all concerned parties basic principles and approaches for the protection of the archaeological heritage.

### **Quarries and Ancillary Activities; Guidelines for Planning Authorities, 2004**

This provides guidance in mitigating and controlling land use and environmental issues through the planning system with regard to the operation of quarries.

### **Architectural Heritage Protection Guidelines, 2004**

These guidelines aim to support the effort of protecting architectural heritage; including, the criteria to be applied when selecting proposed protected structures for inclusion in the Record of Protected Structures. It also offers guidance to Planning Authorities on issuing a declaration on a protected structure and determining planning applications in relation to protected structures, a proposed protected structure or the exterior of a building within an ACA. While the guidelines are primarily aimed at Planning Authorities, it is intended that they will also be of assistance to owners and occupiers of protected structures, of proposed protected structures and of buildings within ACA's, and to those proposing to carry out works which would impact on such structures.

### **Guidelines for Planning Authorities on Sustainable Rural Housing 2005**

Provides guidance on forming policies for facilitating sustainable rural housing

### **Landscape and Landscape Assessment 2000 - Consultation Draft of Guidelines for Planning Authorities**

These Draft Guidelines were prepared to deal with landscape considerations, indicating specific requirements for Development Plans and for development control regarding landscape management. However, they were never brought beyond draft stage.

### **Wind Energy Guidelines for Planning Authorities, 2006**

These Guidelines state that the assessment of individual wind energy development proposals needs to be conducted within the context of a “plan-led” approach. This involves identifying areas considered suitable or unsuitable for wind energy development. These areas should then be set out in the development plan in order to provide clarity for developers, the planning authority, and the public. They aim to ensure a consistency of approach in the identification of suitable locations for wind farm development and the treatment of planning applications for wind farm developments

### **Irish National Forest Standard 2000**

The Irish National Forest Standard published by the Forest Service in 2000 provides the framework for the future of Irish forestry including the need for protection of biodiversity, landscape, archaeology and enhanced community involvement to ensure sustainable forest management

### **National Inventory of Architectural Heritage (NIAH)**

The National Inventory of Architectural Heritage was established to provide both expert and independent data to Planning Authorities on buildings of value. The NIAH provides a source of guidance for the selection of structures for protection, supplies data to local authorities, which helps them to make informed judgments on the significance of structures in their functional area, and fosters greater knowledge and appreciation of Ireland's architectural heritage.

### **Green Paper on Sustainable Energy (1999)**

This paper set a target of increasing the percentage of electricity generated by renewable sources from 6.3% in 2000 to 12.39% in 2005, which will be achieved by the installation of an additional 500 MW from renewable energy sources by 2005, mainly from wind energy. Following on from the Green Paper, the main aim of the Strategy for Intensifying Wind Energy Deployment (July 2000) is to support the delivery of this 500 MW target of renewable energy-based electricity generating plant.

#### **2.4.4 International Conventions and Agreements**

Ireland has ratified a range of International Agreements in relation to our environment. Such Agreements place legal obligations on the State in relation to the conservation and management of our environment and heritage.

### **EU Water Framework Directive (2000/60/EC), 2000**

The Water Framework Directive represents a major revision of EU water policy and establishes a framework for the protection of inland surface waters, transitional waters and groundwater. One of the main requirements of the Water Framework Directive is the development of “River Basin Management Plans” and the designation of a competent authority for each river basin district (RBD). Thus it is based on the concept of River Basin Districts, i.e. the catchment of the river, rather than administrative areas whether county or other area. This EU Directive was transposed into Irish law in 2003 and Aims to prevent any deterioration in the status of any waters and to achieve at least “good status” in all waters by 2015. Article 12 and 13 set out obligations on Local Authorities by June 2009.

The legislation is being implemented through the establishment 7 River Basin Districts (RBDs), 3 of which are international river basin districts (iRBDs), and the co-ordination of actions by all relevant public authorities. In 2004 this process involved completing the characterisation of river basins including identifying economic and other pressures. In 2006 the level of monitoring required for each river basin was determined. 2008 will see the publication of Draft River Basin Management Plans for consultation and finalisation in 2009 including a program of measures. There are two River Basin Districts in Westmeath – the Shannon RBD and the Eastern RBD and management plans for both districts will be finalised during the course of the Plan period. When finalised, these programmes will include a programme of measures; e.g. for waste water treatment plants; which will include requiring planning authorities to take cognisance of impacts of development on the river basin.

### **EU White Paper on Renewable Energy (1997)**

This paper identified a potential growth in the contribution of renewable energy to total energy supply from 14.3% to 23.5% by 2010. Consequently, Directive 2001/77/EC of September 2001 on the



promotion of electricity from renewable sources in the internal electricity market places an obligation on Member States to establish a programme to increase the gross consumption of renewable energy-based electricity generating plant ("green electricity"). The indicative target addressed to Ireland in the Directive is to increase green electricity from 3.6% of gross electricity consumption in 1997 to 13.2% by 2010.

#### **EU Freshwater Fish Directive (78/659/EEC)**

The EU Freshwater Fish Directive (78/659/EEC) was ratified by Ireland with S.I. 293 of 1988, and aims to protect those fresh water bodies identified by Member States as waters suitable for sustaining fish populations. The Directive will be repealed in 2013 by the EU Water Framework Directive.

#### **EU Urban Waste Water Treatment Directive (91/271/EEC) 1991**

Directive 91/271/EEC aims to protect surface inland waters by regulating collection and treatment of urban waste water and discharge of certain biodegradable industrial waste water (basically from the agro-food industry). The Directive sets targets dates for the provision of specified level of collection and treatment facilities. In particular it requires, for all agglomerations above 2,000 population equivalents, sewerage systems and secondary, i.e. biological waste water treatments.

#### **EU Major Accident (Seveso II) Directive (96/82/EC) 1996**

This Directive aims to prevent major-accident hazards involving dangerous substances. Hazardous sites are identified that may pose a threat and development should be limited in the vicinity of such sites. The control of establishments for the purposes of reducing the risk, or limiting the consequences, of a major accident is a mandatory objective of a Development Plan.

#### **Energy Performance in Buildings Directive, 2005**

Arising from the Kyoto Protocol, the EU has set the reduction of greenhouse gas emissions as an important objective. The most significant greenhouse gas is CO<sub>2</sub>, primarily from energy use and over 40% of such emissions derive from energy use in buildings including 27% from housing. The energy used in buildings could be reduced by having more energy efficient design and construction. The EU adopted the Energy Performance in Buildings Directive in 2002 and it has since been transposed into Irish legislation. Legislation requires:

- the energy rating of newly constructed buildings, existing buildings (when existing buildings are let or sold) and of public service buildings;
- improvement of the energy efficiency of certain classes of boilers and heating installations; and
- inspection of air-conditioning systems.

Energy rating requires that in the design of a building a performance target must be set out and when the building is completed it must perform as well as or better than the target. From January 2009 Westmeath County Council as a Housing Authority will have to do an energy rating for all its housing at every letting.

#### **Nitrates Directive (91/676/EEC)**

The Nitrates Directive (91/676/EEC) – Council Directive of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources – was adopted in 1991 and has the objective of reducing water pollution caused or induced by nitrates from agricultural sources and preventing further such pollution, with the primary emphasis being on the management of livestock manures and other fertilisers.

#### **Groundwater Directive 80/68/EEC**

Groundwater Directive 80/68/EEC requires Member States to apply a system of investigation and authorisation to waste disposal and other activities in order to ensure that groundwater is not polluted by dangerous substances.

### **Surface Water Directive 75/440/EEC**

The Directive aims to protect public health by ensuring that surface water abstracted for use as drinking water reaches certain quality standards before it is supplied to the public. The Directive lays down nonbinding 'guide' values and binding 'imperative' values and requires Member States to monitor the quality of surface waters from which drinking water is abstracted and to take measures to ensure that it complies with the minimum quality standards. This Directive has been integrated into the proposed Water Framework Directive.

### **Dangerous Substances Directive 76/464/EEC (S.I. 258 of 1998, S.I. 12 of 2001)**

Dangerous Substances Directive 76/464/EEC creates a legislative framework for dealing with water pollution caused by an extensive list of dangerous substances. Member States are required to adopt pollution-reduction programmes that involve binding water quality objectives and a system of authorisations for discharges.

### **Environmental Impact Assessment Directive 85/337/EEC**

Environmental Impact Assessment Directive 85/337/EEC (amended by Directive 97/11/EC), requires Member States to carry out environmental impact assessments (EIA) on certain public and private projects, before they are authorised, where it is believed that the projects are likely to have a significant impact on the environment. The EIA procedure is an integral part of the planning process and the public can provide input and express environmental concerns with regard to the project. The results of this consultation must be taken into account during the authorisation process.

### **Integrated Pollution Prevention and Control (IPPC) Licensing**

A system of Integrated Pollution Prevention and Control (IPPC) licensing came into effect in Ireland on 12 July 2004. The primary aims of IPPC licensing are to prevent or reduce emissions to air, water and land, to reduce waste and to use energy efficiently. The IPPC system replaces Integrated Pollution Control (IPC) as the licensing regime applicable to certain industrial activities in Ireland.

### **Bathing Water Directive (76/160/EEC) S.I. 155 of 1992, S.I. 230 of 1996**

Directive 76/160/EEC concerns the quality of bathing water, with the exception of water intended for therapeutic purposes and water used in swimming pools. It lays down the minimum quality criteria to be met by bathing water.

### **Habitats Directive**

The EU Habitats Directive 92/43/EEC sets out a scheme of protection of particular animals and plant species, as well as a selection of habitat types. It provides for a network of protected sites known as Natura 2000, which will, when fully in place, include special protection areas designated under the Wild Birds Directive, as well as sites proposed under the Habitats Directive. The Natura 2000 network will provide specific protections for the sites, which will limit the extent and nature of development, which may have a detrimental effect on the flora or fauna identified therein. Ireland is required to propose relevant areas for designation as Special Areas of Conservation for the conservation of listed habitats and species, and to maintain their favourable conservation status. The Habitats Directive was transposed into Irish law by The European Communities (Natural Habitats) Regulations, 1997 (S.I. 94 of 1997).

### **Birds Directive**

The EU Directive 79/409/EEC on the Conservation of Wild Birds, requires that special measures be taken to conserve the habitats of listed migratory and wetland species in order to ensure their survival and reproduction in their area of distribution. The most suitable areas for these species are classified as Special Protection Areas. Ireland is obliged to "take appropriate steps to avoid pollution or deterioration of habitats or any disturbances affecting the birds". Only activities that do not have significant effects on birds are acceptable in Special Protection Areas. The Birds Directive also requires the avoidance of pollution or deterioration of habitats generally outside specifically protected sites. A listing of Special Areas of Conservation and Special Protection Area sites is given in Appendix Three of this Environmental Report.

**UN Convention of Biological Diversity 1992 ratified 1996**

The main objectives of this Convention were to conserve biological species, genetic resources, habitats and ecosystems; to ensure the sustainable use of biological materials; and to guarantee the fair and equitable sharing of benefits derived from genetic resources.

**European Landscape Convention 2000**

This encourages public authorities to adopt policies at local, national and international level to protect and manage landscapes.

**Convention on Wetlands of International Importance (Ramsar Convention 1971)**

The Convention on Wetlands, signed in Ramsar, Iran, in 1971, is an intergovernmental treaty, which provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources.

**European Convention on the Protection of the Archaeological Heritage, 1992 (the 'Valletta Convention')**

This was ratified by Ireland in 1997 and as such we are legally bound by it. The aim of the Convention is to 'protect the archaeological heritage as a source of the European collective memory and as an instrument for historical and scientific study'. It requires that appropriate consideration be given to archaeological issues at all stages of the planning and development process.

**Granada Convention for the Protection of the Architectural Heritage of Europe 1985**

This was ratified by Ireland in 1985 and establishes common principles and strategy, which have informed Part IV of the 2000 Planning and Development Act 2000-2004.

## 3 SEA METHODOLOGY

### 3.1 STEPS IN THE SEA PROCESS

The Environmental Report is an important element of the SEA process. The report is generated from a series of distinct steps taken in the assessment of the likely potential impacts of the proposed plan policies being implemented.

The steps taken in the execution of this SEA process follow the layout of this document, and are as follows:

1. Introduction to and familiarisation with the SEA process.
2. Setting out the Background to the County Development Plan Review.
3. Consultation with the Environmental Authorities, the public and officials with a range of expertise within the Planning Authority.

Scoping was carried out with the three environmental authorities prescribed in the legislation with the Environmental Protection Agency (EPA), Department of the Environment, Heritage and Local Government, and, the Department for Communications, Marine and Natural Resources. These were all consulted in order to determine the scope and the level of detail to be included in the environmental report. A scoping document was submitted to the authorities to facilitate this consultation. A scoping report was prepared to show how the responses received from these authorities were taken account of when preparing the Draft Plan and Environmental Report and this is contained in Appendix Two.

Many other bodies and authorities were consulted as part of the SEA process to source environmental baseline information.

A pre-draft public consultation took place from the 25th March to the 19th May 2006. An SEA issues paper was made available on the website and at other locations for public viewing during this time and all submissions that were received relating to environmental issues and concerns informed the SEA process. These are summarised in the Manager's Report that was submitted to the elected members on the 14th July 2006 and is available in the County Council offices for viewing.

An inter-departmental SEA Steering Group was established within the Council to ensure a broad range of expertise was available to input into the SEA process. This group consisted of representatives from the water services and environment sections and also the Heritage and Conservation Officers. They were consulted at the various stages in the process and made valuable contributions towards identifying significant environmental issues, drafting the environmental protection objectives, assessing the policies, considering alternatives.

4. Establishment of Environmental Baseline and Trends for the county:

Baseline data was collected based on the information included in the scoping report as well as having regard to the requirements of the SEA Directive. The various factors used to describe the current state of the environment included employment and economic development, traffic and transportation, noise, air quality, built heritage, natural heritage and bio-diversity, soils and groundwater, surface water management, utilities and landscape. Human health was considered, either directly or indirectly, under a variety of factors including traffic and transportation, noise, air quality and surface water management. Much of the data was extracted from existing data sources.

5. Identifying significant Existing Environmental Issues in County Westmeath.

This was facilitated by the various forms of consultation that took place as part of the SEA process as described above.

6. Drafting of Environmental Protection Objectives from regional, national and international environmental policy, consideration of the significant environmental issues facing Westmeath specifically and from best practice.
7. The Likely Significant Effects of implementation of the County Development Plan were established through the identification of conflicts between plan policies and environmental objectives (assessed in matrix format).
8. Where conflicts were identified, opportunities to prevent, reduce, or offset the adverse environmental effects were explored and policies altered or augmented where necessary to address / mitigate the effects.
9. Where the conflicts and consequent adverse significant impacts could not reasonably be prevented, reduced or offset, recommendations were made to the Elected Members to remove or change the conflicting policy with a view to preventing the potential effect.
10. Alternatives strategies were considered based on environmental information gathered and a preferred strategy was reached for the County Development Plan.
11. Monitoring measures were identified in order to quantitatively assess the consequences of the identified impacts.

### **3.2 DIFFICULTIES ENCOUNTERED IN COMPILING THE REQUIRED INFORMATION**

The SEA Guidelines produced by the DoEHLG in 2004 state that the SEA process “does not require major new research”. As such, the Environmental Report was prepared and informed by many already available data sources.

Data sources that were used include; research that was carried out within Westmeath County Council, by the Central Statistics Office, by Midlands Local Authorities for the Midlands Waste Management Plan Environmental Report, by the Environmental Protection Agency and also the Heritage Data that has been collated by the DoEHLG and Westmeath County Council.

However there are a number of areas where there was insufficient data available or where the level of detail is not sufficient for the purpose of baseline. These are as follows:

- Completed and finalised Groundwater protection data - vulnerability etc, in the absence of a completed Groundwater Protection Scheme. Interim data however was available from the GSI and from River Basin District Project Offices, which informed the SEA process.
- Complete water body risk data in mapped format.
- Material assets – aggregates, minerals existing in the County that may be available for extraction.
- Data on levels and incidences of noise pollution
- Detailed human health data.

Other constraints included:

Time constraints were a problem at the time of carrying out the actual assessment of Draft policies since work on the Draft Plan itself was being carried out right up to the deadlines and so time was very limited for working with the completed policies to ascertain impacts, mitigation etc and to determine significance with the agreement of the Steering Group.

Limited resources were available for carrying out the SEA, especially GIS and mapping. There were also limits to the staff time resources for carrying out the SEA, proofing and cross-checking the Environmental Report both within the Forward Planning team and in the Local Authority as a whole, due to workload and other deadlines (eg the County Development Plan Plan) at the time.



## 4 CURRENT STATE OF THE ENVIRONMENT

### 4.1 INTRODUCTION

In line with the relevant legislation, this section gives a breakdown of detail describing:

- the current state of the environment as at August 2006, or as at the date of the most recently available data as stated
- the environmental characteristics of areas likely to be significantly affected and
- the existing environmental problems relevant to the plan, including those relating to areas of particular environmental importance

The likely evolution of the environment without implementation of a new Development Plan – the 'do-nothing scenario' is detailed for each environmental factor following the current state of the environment information.

The interrelationship between environmental factors is discussed within each section and as cross-overs emerge they are noted and dealt with in which ever section they are most relevant.

### 4.2 ENVIRONMENTAL BASELINE, TRENDS AND THE 'DO-NOTHING SCENARIO'

#### 4.2.1 Landscape and Topography

##### General landscape/ topographical features

Westmeath has a variety of landscapes but the most prominent one can be described as a "undulating pattern of low hills, patches of woodland and bog, with many lakes nestling in shallow valleys"<sup>∞</sup>. Mountains are almost absent; the highest point is at 280 metres on the Hill of Mullagmeen in the extreme north of the County. The hills both conceal parts of the landscape and provide more commanding views of it, providing more variety and interest in the views available. In general, the areas of greatest scenic merit, such as Westmeath's lakelands are also the areas of greatest nature value and are also the areas that attract visitors in numbers.

Landscape is an inseparable element in the structuring of settlement patterns and the location and distribution of its dwellings. Landscape form has been created by the forces of nature. Patterns of movement and settlement in the landscape have been created as a result of inhabitation of the landscape. Movement is facilitated by an intricate road structure, supplemented historically by railways and the canal system. Towns, villages, and small settlements form the nuclei for the population in rural areas. Estates with large houses, farmsteads and workers cottages have traditionally provided the pattern of dispersed habitation in support of working the land. Agricultural development has created many elements of the landscape; field boundaries, grass pastures, plantations of trees, drainage systems, property boundary walls and hedges.

The landscape of County Westmeath has been shaped within an unimaginably long timescale. Initially, over three hundred million years ago, it underwent a process of gentle folding of the limestone rock base. Much more recently, about one-and-a-half million years ago, the onset and impact of the ice age was to create the base structure of the landscape, which we know today. The moulding of the landscape underneath the ice created mounds and ridges of glacial deposits, with drumlins; (small, rounded hills), eskers and kames; (fluvoglacial ridges created under the ice) and moraines; (larger ridges created at the end of the advancing ice sheets).

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<sup>∞</sup> David Hickie, 'Nature in Westmeath: A Wildlife and Habitat Guide', 2005

Thus, in Westmeath, we see predominantly a post-glacial landscape, with lakes and bogland, tree-covered eskers and drumlins. The drier ground topography west of Mullingar is formed by Carboniferous Limestone. The vegetation derives from the growth of peat bogs after glaciation and the development of enclosed pasturelands across the County.

It is possible to characterise the extraordinary local quality of much of the landscape:

- In the North of the County, centred on Castlepollard, the lakes combine with a hilly landscape, reaching into the drumlins of the northern counties
- The Lakeside areas of Westmeath are among the most scenic landscapes in Ireland, with a remarkable diversity between them
- Low-lying areas alternate between raised boglands and gently undulating landscapes which create short horizons and enclosed, intimate-scaled countryside
- To the east, the plain is relatively flat and relies on its vegetation of hedgerows and groups of trees to create a local environment
- The Royal Canal provides a remarkable passage through undisturbed landscape. It should be seen as a corridor where any development should be treated with great care to maintain the undisturbed quality of the land through which it runs
- Cultural Landscapes are those, which incorporate significant archaeological or historic remains, demesne landscapes and field boundary patterns, or cultural associations
- The main roads should be seen as landscape corridors where development is treated with special care, if only to maintain a good image of the County for passing travellers. Landscape characteristics will vary according to the location of the roads.

The capacity of the landscape to absorb development is clearly an important factor in the protection and cherishing of its local qualities. Open uplands will not easily shelter or hide development, although they frequently afford the backdrop of a varied skyline. Undulating landscapes have skylines, which are easily broken by building at horizon level, interrupting the natural enclosure of the landscape. They are, however, capable of absorbing well-sited single buildings because of the complex undulations, which create short horizons and visual diversity. Flat landscapes rely on softening the impact of development by well-developed boundaries and vegetation, which can help to stitch new development into the existing structure of the landscape.<sup>∞</sup>

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<sup>∞</sup> Westmeath County Council, 'Westmeath Rural Design Guidelines', 2005



### **Landscape Character Assessment**

A Landscape Character Assessment has been carried out for inclusion in the County Development Plan 2008-2014, which informs policy for wind energy development, and other development.

### **Protected views/landscapes**

It was an objective of the previous County Development Plan 2002-2008 to “preserve, improve and open up places or areas from which views or prospects of high amenity value may be enjoyed”. Specific places from which views of exceptional importance may be enjoyed have been identified in the previous County Development Plan and these include views across Lough Ree, at Uisneach, from Knockastia, Coolatore, around each of the lakeland areas and from the N6 towards the Eskers near Tyrellspass.

These views are enjoyed by local people and tourists alike and are very important in terms of the overall character and setting of valued amenity and heritage areas. In this regard, objectives are contained in the County Development Plan 2008-2014 to preserve and improve these views and one such objective is that “no structure shall be so sited as to hinder the preservation of such views or prospects”. It is also an objective to develop in an appropriate and sensitive manner car parking facilities and viewing places at points where views and prospects of special importance are obtained and where appropriate and in a sensitive manner to have lowered or removed any walls, fences, hedges or other obstructions to such views. The protected views are listed in the County Development Plan 2008-2014.

### **High Amenity Areas**

Having regard to their amenity and recreational potential, the following areas are designated as Areas of High Amenity:

- Lough Ree Area
- Lough Lene Area
- Lough Owel Area
- Lough Ennell Area
- Lough Derravaragh Area
- Lough Sheelin Area

The aims for the high amenity areas as quoted in the previous Development Plans for Westmeath County and Athlone 2002-2008 are:

- "To conserve the natural resources of each area in terms of scenic value, natural rural character, wildlife and water quality.
- To provide for the use of each area for recreational purposes by the local communities.
- To provide for the development of tourism".

The existing land use of the designated Areas of High Amenity is mainly agriculture and forestry. Development not directly related to these land uses or to the recreational and amenity function of these areas will normally be excluded through Development Control.

A 'Buffer zone' for the Lough Ree High Amenity Areas was also identified and the previous CDP policy states that rural housing should be restricted in this area. However, extractive industries were not mentioned as restricted in Buffer Zones.

### ***Do-Nothing Scenario***

Continuation of existing policy will restrict development in High Amenity Areas and buffer zones to protect these sensitive areas from unsuitable development. However unsuitable developments such as quarrying and the extractive industries are not specifically mentioned as restricted in all of these areas. The visual impact of such development could be potentially significant in sensitive areas.

Continuation of existing rural housing policy will restrict housing development in the open countryside to those meeting the 'local need' criteria, helping to protect the landscape from overdevelopment. The existing rural design guidelines will help to ensure that applications for rural housing are of a higher quality and that new housing will be integrated into the landscape where possible. The lack of a full landscape character assessment to guide future policy formulation for quarrying and wind energy for example may result in inadequate consideration being given to cumulative effects on landscape from development. A landscape character assessment would help to strengthen policy for landscape protection as appropriate and would guide comprehensive strategies for development.

A lack of new policy to address issues in villages such as Rochfortbridge and Tyrellspass in light of the reduction of traffic that will occur in these villages and the failure to provide new strategies to address issues such as traffic calming, environmental improvement and increased pressure for residential development for Dublin based commuting for example, would result in poor planning for the future needs of these villages.

## **4.2.2 Population and Human Health**

### **Population**

The 2006 CSO Census shows that the population figures for Ireland have increased by 8.2% from 3,917,203 to 4,239,848 an actual increase of 322,645 persons. This four-year period has experienced the highest annual growth rate on record.

Within this, the midlands region grew by 11.1%, which comfortably exceeds the national average of an 8.2% increase giving a midlands population of 251,380. County Westmeath increased in population by 10.4% from 71,858 to 79,346 an actual increase of 7,488 persons.

Westmeath accounts for 31.5% of the Midlands Region and 1.9 % of the State population.

The increase in population in County Westmeath can be attributed to positive net migration and a negative natural increase resulting in an overall increase.

The 2002 to 2008 Westmeath County Development Plan projected population for the County to reach 79,343 by 2020. The 2006 CSO figures has shown that the actual population in 2006(79,346) has reached that figure which was projected for 2020. This demonstrates the overwhelming growth that has taken place within the County in the past number of years. It also highlights the importance of comprehensive population analysis as a basis for the new CDP in order to target policy at areas in most need of attention and to provide an appropriate

amount of zoned land and services across the county in a sustainable manner to meet future population trends.

The four fast growing areas (by electoral district) in the County in the 2002-2006 census were Kinnegad (66.5%), Riverdale (39%), Mullingar Rural (37.6%), and Devlin (34.6%).

Aside from marginal decreased, the areas that suffered population decline between 2002 and 2006 were:

- Emper decreased by 5.9%, from 203 to 191, 12 persons
- Glore decreased by 14.8%, from 169 to 144, 25 persons
- Rathowen decreased by 2.5%, from 325 to 317, 8 persons

The Population Distribution map attached shows that high populations are concentrated in recognised urban centres of Athlone, Mullingar and Moate. However the second highest population concentrations are predominantly in the areas immediately surrounding these urban centres, showing that urban sprawl has taken place. This is an unsustainable settlement trend and recent national and regional policy aims for more balanced development and urban consolidation in order to counteract sprawl.

## **Human Health**

Human health protection is a fundamental aspect of environmental protection. The level of environmental public health protection in this country is high, especially since the threat from infectious diseases has largely diminished due to successful immunisation programmes and improved diet, housing and general living conditions. Ireland's temperate climate is a contributory factor in reducing risks to public health, especially in terms of infectious diseases and sun exposure. Climate is discussed in more detail in Section 4.2.4.

Human Health issues in Westmeath are generally concerned with the quality of drinking water and air quality and also to the quality of life of Westmeath's citizens, which can be affected by factors such as commuting patterns and the provision for recreation and amenity in the County.

Drinking water quality is dealt with in detail in section 4.2.3. Air Quality, which is also an environmental issue that impacts on human health is dealt with elsewhere in section 4.2.4 entitled 'Air and Climate'.

## **Health and Safety**

The European Communities (Control of Major Accident Hazards Involving Dangerous Substances) Regulations gives effect to Council Directives 96/82/EC and 2003/105/EC, hence implementing the Seveso II Directive on the control of major hazards involving dangerous substances. A 'major accident' is defined in the Regulations as an occurrence such as a major emission, fire or explosion resulting from uncontrolled developments in the course of the operation of any establishment, leading to a serious danger either to human health or to the environment, whether immediate or delayed, inside or outside the establishment, and involving one or more dangerous substances. Under these regulations, the Health and Safety Authority must give advice to the planning authority when requested in relation to the siting of new establishments, modifications to an existing establishment to which the Directive applies or proposed development in the vicinity of an existing establishment.

The regulations apply to companies where dangerous substances are present in quantities equal to or above specified thresholds. One such company exists in the vicinity of the Westmeath County Council administrative area, that is Elan Corporation plc. This company is located in Athlone town but just outside the Athlone Town Council administrative area. The HSA recommends that a consultation distance of 1000 metres be taken from the perimeter of the site within which the relevant planning authority will take advice in relation to any landuse planning from the HSA.

## Noise Pollution Control

In Ireland, the principal law relating to noise is Sections 106, 107, and 108 of Part VI of the Environmental Protection Agency (EPA) Act 1992. The Minister for the Environment has power under Section 106 of this Act, after consulting with other concerned Ministers and the EPA, to make regulations for the purpose of the prevention or limitation of any noise which may give rise to a nuisance or disamenity, constitute a danger to health or damage property. However, no such regulations have been introduced to date.

Local Authorities have powers under Section 107(1) to serve a notice on any person in charge of premises, processes or works, other than an activity which is licensable under IPC, when they consider that it is necessary to do so in order to prevent or limit noise. The EPA has the same power in relation to an activity licensable by it.

The (Noise) Regulations 1994 (S.I. 179) which implemented Section 108 of the EPA Act, 1992, were designed to simplify and strengthen the procedures for dealing with noise nuisance. A Local Authority, the EPA or any other affected person may complain to the District Court under Section 108(1) of the EPA Act, where any noise is so loud, so continuous, so repeated, of such duration or pitch or occurring at such times as to give reasonable cause or annoyance to a person in any premises in the neighbourhood, or to a person lawfully using any public place.

Noise and traffic can be an issue of concern to many residents living close to major roadways, factories, shopping centres, quarries, waste facilities, sports stadia and other facilities attracting significant volumes of traffic. However no specific data in relation to levels or incidences of noise pollution was available at the time of preparing this report.

## Health Services

There is one Midland Health Board Hospital in the County, Midland Regional Hospital, Mullingar. The total of patients on waiting lists in December 2003 for Mullingar hospital was 125, compared to 403 people on waiting lists in Tullamore hospital. The waiting list statistics<sup>∞</sup> showed that for the Specialty area of Gynaecology for example, adults on the public in-patient waiting list for 3 to 6 months were 58, 6 to 12 months were 49, 12 to 24 months were 15 and 24 months were 3 people. No children were on an inpatient waiting list for public patients. Many other health services exist in the County including general practitioners, nursing homes and dentists.

## Quality of Life and Travel Patterns

There is little doubt that increased economic development coupled with reduced unemployment levels has brought significant improvements in living standards to many people in recent years. In turn this has also seen a change in the leisure /work trade off; the environmental impact of increased development and enhanced prosperity is not without some cost in terms of increased commuting times, chronic time shortages, lack of leisure time, reduction in air quality and encroachment of urban areas into the countryside. All of these factors can impact on human health.

The returns from the 2006 Census<sup>∞</sup>, show that driving to work by car was the principal means of travel used by Irish workers in 2006 and indicate that commuting to work has become longer and no doubt less pleasant for many people. The number of private cars licensed for the first time in the State grew from 166,270 in 2005 to 173,273 in 2006. <sup>∞</sup>. The number of workers driving their car to work increased from 55.1 per cent in 2002 to 57 per cent in 2006, while the proportion of cyclists travelling to work was reduced. The average distance travelled to work in 2006 was 15.8km, little change on 2002. Rural based workers travelled an average of 20.9km compared with 12.8km for workers living in urban areas.

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<sup>∞</sup> [http://www.dohc.ie/statistics/waiting\\_list/2003dec2.pdf](http://www.dohc.ie/statistics/waiting_list/2003dec2.pdf)

<sup>∞</sup> (<http://www.cso.ie>)

Commuting patterns tend to be from rural to urban areas and from smaller settlements to larger towns or cities. Commuting from east Westmeath to Dublin city is a feature, particularly from towns along the N6 and N4 routes. The opening of the new Galway to Dublin motorway is likely to encourage commuting for longer distances to Dublin, from areas further and further away. This will impact negatively on people's quality of life, as well as increase air pollution.

The prevalence of low-density suburban sprawl in recent years is relevant to this issue, since this tends to make public transport services economically unviable, increasing reliability on the private car to travel to work, shops or recreation.

### **Amenity, Walking and Cycling**

The availability of open space, green linkages such as walk and cycle ways and recreational facilities has a very important role in creating quality and healthy environments for all, through:

- Allowing appreciation of the natural environment and ecology by providing access to natural heritage, woodland and landscape within easy reach of homes, for physical activity, rest and leisure use, both in densely populated and disadvantaged communities, and in new developments.
- Preventing over-development and 'town cramming'.
- Providing opportunities for more active lifestyles, sporting activity, community development and social interaction.
- Facilitating access to the countryside, linking urban and rural areas.

Established and maintained walking routes within the County include the 'Westmeath Way', the 'Táin Trail' and 'Sli na Sláinte'. The canal, lakes and rivers also have valuable amenity and recreational value and it is important therefore that their amenity value is maintained. Further detail is given on the quality of these waterways in other sections.

### ***Do-Nothing Scenario***

Provision for the population projected for the coming years by the last Development plan without supporting policies would result in under provision of essential infrastructure and services. Without a review of zoning objectives and policies in relation to road, water, sewerage and community infrastructure, the population up to 2014 of the County will not be adequately provided for. Retaining existing population targets and extrapolation of past trends into the future will result in inappropriate levels of service provision.

Continuation of public health trends would mean that the factors that presently impact upon human health remain and existing trends will be extrapolated into the future. The main feature is that of transport patterns. Continuation of current trends would mean that the under provision of public transport will continue and over-reliance on the private car would exacerbate. Current high levels of major road building would have the effect of inducing private car travel and the continuation of such a level of investment in this area would intensify the commuting issue. Long distance commuting patterns if they continue or worsen would have a detrimental effect on community life, human health, and the environment due to associated carbon emissions.

Continuation of development trends without strong policies on water quality protection and the implementation of the Water Framework Directive may result in the deterioration of drinking water quality, especially if development that poses threats to groundwater occurs in areas of groundwater vulnerability or where groundwater bodies feed into surface water supplies.

### **4.2.3 Water**

In 1997 the Government published a policy document entitled Managing Ireland's Rivers and Lakes; a catchment based strategy against eutrophication. The primary objective of this document was to address on-going enrichment of surface waters on a catchment basis. In 1998 this policy was given



statutory effect with the introduction of the Phosphorus Regulations. This introduced a 10-year time frame to achieve stringent new standards. These standards were defined based upon baseline data gathered by the EPA in the 1995 1997 review period.

Pressure to tackle deteriorating water quality due to high nitrate levels has been brought forward from the EU Nitrates Directive agreed in December 1991 and later translated into Irish law.

The EU Water Framework Directive came into force in December 2000. The Water Framework Directive as previously mentioned specifies water quality targets that are even more ambitious than those of the national Phosphorus Regulations. A 16-year implementation time frame is envisaged to achieve at least 'good status' for all waters. The catchment-based approach to water quality is enshrined in the Directive and Member States are required to develop River Basin District Management Plans by 2009.

Earlier catchment based monitoring and management systems relevant to Westmeath include the Lough Derg /Lough Ree Catchment Monitoring and Management System and the Three Rivers Project. Information gathered from these projects will be incorporated into the RBD projects. Local authorities will have a key involvement in managing the RBD Projects.

The Water Framework Directive requires that stricter water quality regulations will have to be taken on board at national level. It demands a more comprehensive and integrated approach to water management and will have significant implications for resources given its scope and ambitious targets. The WFD will govern all aspects of the aquatic environment including surface and groundwaters.

Westmeath is divided between two regions for the purposes of implementation of the Water Framework Directive. Most of the County is within the Shannon Region (ShRBD) but a portion to the east of the County; the Boyne Catchment is within the Eastern River Basin District Area (ERBD).





## Surface Water Quality

Since the 1970s, there has been a gradual, insidious increase in slight to moderate pollution in a number of lakes in Westmeath<sup>∞</sup>. This is due mainly to agriculture but also to poorly treated sewage from towns and an increase in one-off houses in the countryside. This condition is called enrichment or 'eutrophication'; a deterioration in water quality caused by an excess of nutrients, such as phosphate and nitrogen. Waters so affected become unsuitable for Brown Trout, which are indicators of the highest water quality, and a range of other animals can no longer survive. In extreme circumstances, entire lakes can suffer from algal blooms, some of which are toxic. Eutrophication results in an undesirable disturbance to the balance of organisms present and to the quality of the water concerned.

The risk of failure to achieve good status can arise from different sources. These include directly influencing factors, such as significant emissions into or abstractions from the waters, and changes to the morphology of the waters or their boundaries with adjacent lands. Any risk assessment process must also take account of activities taking place at some distance from the waters but capable of effecting their status. In such cases consideration is given to the pathway whereby the activity is connected to the water body as this can either enhance or mitigate the effect of the activity on the water status.

For surface waters pressures from water abstractions, water flow regulations, morphological alterations, point sources and diffuse sources should be identified to enable their relative significance to be assessed. Flow regulation pressures, which include structures such as hydroelectric dams and major water supply reservoirs, and morphological pressures (or physical alterations) apply only to surface waters. Morphological pressures include activities such as channel alterations, agricultural enhancement, flood defences, locks and weir facilities, dredging, ports and tidal barrages. A database of these pressures was generated by the RBD project based on collation of datasets from disparate organisations.

Point source pressures identified for surface waters include Urban Wastewater Treatment Plants (UWWT), storm overflows, sludge treatment plants, Integrated Pollution Prevention and Control (IPPC) industries and non IPPC industries, Local Authority Licensed (Section 4) industry discharges, combined sewer overflow (CSO) discharges, Water Treatment Works (WTP) discharges, Mines, Quarries, and Landfills. The influence of point pressures on water bodies tends to be clustered around towns and villages.

Diffuse source pressures include widespread activities such as agriculture, non sewerer rural housing, urban land use, transport, some industrial activities, peat exploitation and acidification from forestry activities.

Eutrophication of inland waters is considered to be Ireland's most serious environmental pollution problem and the most relevant environmental issue for Westmeath. Agricultural nutrient inputs are the most significant portion of nutrient load (nitrogen and phosphorus) and are higher in more intensively farmed areas. However, the EPA 'Ireland's Environment 2004' Report confirms that a significant portion of the nutrient loss from agriculture occurs during winter months when plant and algal growth rates are lower therefore the resultant impact is not as severe.

Other sources of nutrients include wastewater treatment plants, industry, and septic tanks. In addition to the measures taken in the agricultural sector such as agricultural bye-laws, measures continue to be taken to prevent pollution from other sectors. These measures include legislation to regulate discharges from industrial and commercial activities, continued major investment in urban wastewater treatment facilities nationwide, additional legislation to regulate the discharge of dangerous substances and the virtual elimination by the detergents industry of phosphate-based domestic laundry detergents.

According to water quality data collected by the EPA, the increase in eutrophication has slowed nationally, because of improved sewage treatment and upgrading of farmyards, where slurry and silage effluent are properly contained. Fertiliser management in agriculture needs to be improved.

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<sup>∞</sup> Hickie, 'Nature in Westmeath: A Wildlife and Habitat Guide', 2005

## **Water Quality in ERBD Portion of County Westmeath**

The ERBD Characterisation Report covers the Boyne catchment, some of which is in the east of County Westmeath. The Westmeath portion of the ERBD contains 26 river water bodies and 4 lake water bodies. Significant watercourses include the Boyne, Yellow, Castlejordan and Milltown. Following a risk assessment of River Water Bodies in the Boyne Catchment, it was found that all of the Boyne catchment river water bodies within the County fell into the 'probably at risk' category. It can be seen that the highest incidence of risk comes from channelisation, and to a lesser degree, intensive land use. The Boyne catchment has been extensively drained, particularly in the 1970s and 1980s as a means to improve and expand farm land.

River water quality in this area is generally poor, with all 12 River Water Bodies assessed by the EPA having Q-values of less than 4, placing them "at risk." Westmeath also has significant agricultural activity and this is reflected in the risk assessment.

In terms of point sources the Westmeath ERBD area contains 5 Waste Water Treatment Plants. The largest of these works are Rochfortbridge and Kinnegad, while Clonmellon is the smallest. There are 3 Section 4 dischargers, 2 of which discharge of the Milltown River. There are 4 IPPC authorised activities, with 2 peat extractors, 1 pig farm and a cement manufacturer. There is one combined sewer overflow (CSOs), located at Trim Rd, Kinnegad. There is also one pumping station, located at Cork Hill, Kinnegad.

There are 2 Water Treatment Plants in this portion of Westmeath, at Killucan Reservoir and Ballany, serving a p.e. of c.18000 and 7000 respectively.

The area contains one quarry, Shay Murtagh Ltd., and 7 waste sites. Of these sites, one is active; Marlinstown Bog. There is one surface water abstraction located at Lough Lene licensed to abstract 4500 m<sup>3</sup>/day and 2 groundwater sources (Lewinstown & Raharney). These range in volume from 7m<sup>3</sup>/day to 14 m<sup>3</sup>/day.

For the River Water Bodies overall risk from all pressures, 16 are identified as being "at risk", and 10 "probably at risk". Two River Water Bodies are identified as being "at risk" from diffuse source pressures, with a further 21 "probably at risk". Agricultural land use (RD1) is the most significant factor. No other diffuse sources lead to a 'probably at risk' designation, though a number of septic tank clusters are identified. 7 river water bodies are "probably at risk" from point source pressures. The most significant point source pressure comes from WWTPs, with CSO's and IPPCs providing a lesser degree of risk. All river water bodies are considered to be "probably at risk" from morphological pressures. The channelisation test is responsible for all of these risk designations, with intensive land use being a lesser risk factor. Two River Water Bodies (all on the Deel River) are "at risk" from hydrological pressures, and 3 "probably at risk" (also on the Deel sub-catchment).

The lakes in the east of the county such as Lough Lene and White Lake still have good water quality and a healthy lake ecology. Overall, one Lake water body is "at risk", 2 "probably at risk" and one "not at risk". All lakes are "not at risk" from diffuse sources. No Lake Water Bodies are "at risk" from point source pressures. Three Lake Water Bodies are "probably at risk" from morphological pressures, with channelisation leading to these designations. One lake, Lough Lene was "at risk" from hydrological pressures.

## **Protected Areas in the ERBD portion of Westmeath**

- Salmonid Waters - River Boyne
- Special Areas of Conservation- River Boyne/Blackwater
- Special Protection Area Rivers Boyne & Blackwater, Boyne Coast & Estuary, White, Ben & Doo
- Loughs Bane & Glass,
- Recreational Waters - Lough Lene Cut
- Nutrient Sensitive Waters - None
- Drinking Water (Rivers) - None

- Drinking Water Lakes Lough Lene, Lough Bane

### Water Quality in ShRBD Portion of County Westmeath

General conclusions about risks to surface water quality in the district as a whole were made as follows:

77% of river water bodies comprising 84% of river water body area are at risk or probably at risk. Morphological alterations (mainly historical drainage works) and diffuse pollution are the dominant pressures on ShIRBD rivers, with morphological pressures more widespread than diffuse pollution pressures.

For lakes, 74.4% of water bodies and 96.4% of lakes water body area, are identified as being at risk or probably at risk. Impact data and abstraction pressures accounted for the highest number of at risk water bodies (13 and 11 respectively), while the dominant pressures on probably at risk water bodies were diffuse source pollution and morphological pressures.

Detail specific to Westmeath can be seen in the attached maps, which include detail on the following risk assessment results for surface water in the Shannon RBD portion of the County:

Lake water bodies that are 'probably at significant risk' from diffuse sources are: Loughs Owel, Derravarragh, Ennel, Sheelin, Bane, Ree, Kinale and Glen Lough; from morphological sources, those 'probably at significant risk' are: Lough Bane and Lough Ree; from point sources Lough Ree is 'at significant risk' and Loughs Ennell, Kinale and Killinure are 'probably at significant risk'. Overall results for lake water bodies showed that Loughs Ree, Derravarragh, Sheelin and Kinale are 'at significant risk' of pollution. Trends in water quality in recent years have been that the condition of Lough Ree has deteriorated<sup>∞</sup>.

River water bodies that are 'at significant risk' from diffuse sources are the Brosna and the Inny. Those 'probably at significant risk' from diffuse sources are the Shannon, parts of the Inny and the Yellow River. From morphological sources, some tributaries of the River Inny, (at Foxhall) are 'at significant risk' and the Dungolman and Brosna are 'probably at significant risk'. From point sources, rivers 'at significant risk' are the Brosna, Shannon and Yellow River and 'probably at significant risk' are parts of the Inny and the Gaine River. Overall risk assessment for rivers in this portion of the County showed that the Shannon, Brosna, Boor, Inny, Dungolman and Yellow rivers are 'at significant risk' from pollution<sup>∞</sup>.

According to the Lough Derg and Ree Catchment Monitoring and Management System, a population of about 157,000 in the catchment are not connected to a public sewerage system. The vast majority of these rely on septic tanks to treat their wastewater. Conventional septic tank systems (septic tanks and percolation area), properly installed and maintained, are satisfactory where suitable subsoil conditions exist. However, the Environmental Protection Agency (EPA) has stated that a significant number of septic tank systems do not function properly. This is mainly because they have been poorly constructed, installed, operated, maintained or located in areas with unsuitable sub soils, or the percolation area is inadequate.

### Nitrates

The concentration of nitrate in rivers is a key quality indicator because of its enriching effect as a nutrient and importantly because of the potential health implication of high nitrate concentration in river waters abstracted for potable supplies.

The EU Nitrates Directive (91/676/EEC) requires member states to take specific measures to protect surface and underground waters from nitrate contamination from agricultural activities. In addition direct waste discharges, such as sewage, may also contribute to such

<sup>∞</sup> Hickie, 'Nature in Westmeath; a Wildlife and Habitat Guide'. 2005

<sup>∞</sup> Shannon River Basin District Characterisation Report, 2006

contamination and the EU Directive on urban wastewater treatment (91/271/EEC) provides for the removal of nitrogen from such waste in certain circumstances.

The Irish Regulations implementing the Directive, were enacted and published as the European Communities (Good Agricultural Practice for Protection of Waters) Regulations 2005 (S.I. No. 788 of 2005)). In complying with the Nitrates Directive a four-year action plan is being implemented, starting this year. Under these Regulations, a local authority shall carry out, such monitoring of surface waters and groundwaters at selected measuring points within its functional area as makes it possible to establish the extent of pollution in the waters from agricultural sources and to determine trends in the occurrence and extent of such pollution. The local authority also has a role in carrying out enforcement under these Regulations.

### **Nutrient Sensitive Waters**

Nutrient sensitive waters in Westmeath have been identified. Lough Ree on the River Shannon has been identified as a sensitive area in its entirety. The River Brosna, downstream of Mullingar sewage outfall [opposite intersection of regional road (R400) with N52 south of Mullingar], to Lough Ennell are also considered sensitive.

Westmeath County Council can compel farmers to prepare nutrient management plans where this is considered necessary to prevent or alleviate water pollution. This power is provided under Section 21A of the Water Pollution Act. The Department of the Environment and Local Government issued detailed guidelines on the preparation of nutrient management plans to local authorities. A Nutrient Management Plan is recognised as a key tool in curtailing nutrient (Phosphorous and Nitrogen) losses from agriculture. It involves a planned approach to the control and safe use of nutrients from all sources on the farm. Crop nutrient application levels are brought into line with crop requirements so that losses to the environment are minimised. Where a farmer receives a notice to prepare a nutrient management plan an existing plan prepared for REPS, for example, will suffice.

Agricultural bye-laws, introduced under Section 21 of the Water Pollution Act, are now in force in Westmeath, which were adopted to deal with specific problems in specific catchments listed by townland. All persons farming land in those townlands listed in Schedule 3, located to the north of the County have been required to submit a Nutrient Management Plan to the Council for its approval. Persons farming land within the townlands identified in Schedule 2, including land surrounding Lough Owel and lands to the north of the county; must provide 20 weeks storage capacity for livestock manure arising from livestock housed during the winter period and shall not apply nutrients from an intensive agricultural enterprise, save in accordance with an approved nutrient management plan<sup>∞</sup>.

### **Water Supply, Conservation and Drinking Water Quality**

The vast network of watermain, pumping stations and treatment plants situated throughout the county require continuous maintenance by Westmeath County Council.

2000 million gallons of water are supplied each year to over 14000 premises from seven separate sources. Ongoing sampling of rivers and lakes is monitored by Council staff and Midland Health Board staff under the European Union Drinking Water Directives.

Westmeath County Council have major Water and Sewerage schemes ongoing, the largest being the Annagh Reservoir scheme with an estimated cost of £4.1million and Mullingar Sewerage Scheme with an estimated cost of £2.4m. The council also has responsibility for the Rural Water Programme, which was devolved from Central Government in 1997.

Water conservation is an essential element to ensure optimal use of natural resources. Conservation measures include not only the monitoring of usage of water, early detection of leaks (it is estimated that currently there is a 40% level of water leakage) and the replacement of infrastructure but also an awareness programme for consumers.

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<sup>∞</sup> Westmeath County Council, *Water Pollution (Agricultural ) Bye-Laws, 2000*

The Government's National Water Pricing Policy Framework requires the charging of non-domestic (business) customers for water services so as to recover the full costs of providing water services to customers. This is in accordance with National and EU policy on the application of the "polluter pays" principle, including the EU Water Framework Directive. In order to implement the National Policy, the Council is required to apply charges to the non-domestic sector on the basis of the "water in/water out" principle, i.e. the recovery of the full cost of all water services (water supply and sewage collection and disposal) by means of a unit charge in respect of metered water supply.

Considerable investment has been made nationally in successfully improving drinking water quality, especially in the larger supply schemes, although according to the EPA National 'State of the Environment Report', 2004, unacceptably high microbiological levels are continually being found in many of the smaller private rural schemes.

A Directive on the quality of water intended for human consumption (98/83/EC) was proposed by the European Commission in 1995, and adopted in November 1998. Regulations to give effect to the Directive from January 2004 have been published by the Department of the Environment and Local Government (DELG).

In terms of the individual parameters, some features introduced in these Regulations are as follows:

- lead – limit value reduced from 50 µg/l to 10 µg/l; 15 year transition period to allow for the replacement of lead distribution pipes;
- pesticides – limit values for individual substances and for total pesticides retained (0.1 µg/l or 0.5 µg/l), plus additional, more stringent ones introduced for certain pesticides (0.03 µg/l);
- copper – limit value reduced from 3 to 2 mg/l.

Standards have also been introduced for new parameters such as trihalomethanes, trichloroethene, tetrachloroethene, bromate and acrylamide. A more stringent regime for monitoring microbiological parameters will include clostridia and streptococci, in addition to coliform monitoring.

The Environmental Protection Agency (EPA) publishes a report on drinking water monitoring annually. Overall Results for Westmeath from the most recent report<sup>∞</sup>, from monitoring carried out in 2004, were as follows:

The most serious health issue raised in the report relates to levels of non-compliance for the microbiological parameters, especially faecal coliforms. Faecal coliforms originate in faecal matter, either animal or human, and while non-pathogenic in themselves are strongly indicative of the possible presence of pathogenic organisms that can be responsible for serious waterborne diseases. The bulk of microbiological non-compliances are found in the locally managed group schemes, which are managed and operated by consumers locally, as opposed to the public supplies provided by sanitary authorities.

These group schemes, serving approximately 10 per cent of the population, can be further classified into (a) 'public' group schemes, which receive their water from the sanitary authority and distribute it locally; and (b) 'private' group schemes, which distribute water obtained from a private source, often without any treatment, including disinfection.

Overall Results from EPA's Monitoring carried out in 2004 used analysis that was carried out on 87 check and 18 audit samples during 2004. There was no monitoring carried out in private supplies that supply water as part of public or commercial activities in Westmeath during 2004.

The overall rate of compliance in Westmeath County Council, 98.3%, was above the national average during 2004. Water supplies in Westmeath displayed above average compliance with the chemical and indicator parametric values but slightly below average compliance with the microbiological parametric values public water supplies.

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<sup>∞</sup> "The Quality of Drinking Water in Ireland: A Report for the year 2004", EPA

There were 3 incidents of E. coli contamination in 3 public water supplies in Westmeath during 2004; one in the Athlone and two in the Castlepollard supplies. While the Athlone and one of the Castlepollard incidences were due to the detection of a single E. coli in one sample each, the case in the other Castlepollard supply was detected in follow up samples (at higher levels) and the water was contaminated with E. coli for two weeks before a compliant sample was obtained. The microbiological quality of the 3 private group water schemes was good and all three were compliant with the E. coli parametric value throughout the year.

There were just two exceedances of the parametric values for the chemical parameters in public water supplies in 2004. Both exceedances were with the fluoride standard and were in different supplies. However, both exceedances were less than the EU parametric value of 1.5 mg/l and were not repeated in either supply in 2004. The 3 private group water schemes were fully compliant with the chemical parametric values in 2004. Compliance with the indicator parametric values in both public water supplies and private group water schemes was above the national average during 2004. The sole issue of note with respect to both types of supplies was the relatively low percentage of samples that complied with the parametric value for coliform bacteria (90% and 81% respectively)<sup>∞</sup>.

Lough Owel supplies approximately two thirds of the County with drinking water and for this reason it is imperative that the water quality of this catchment in particular is preserved. A Vulnerability Study was carried out in 2003 to estimate the quality and threats to the quality of this water supply which will inform policies relating to this water supply in the future<sup>∞</sup>. Groundwater is a significant contributing source of water inflow to the lake, providing a conservative estimate of 21% of the overall inputs to the lake. The three aquifers that provide recharge to the lake are the Derravaragh Cherts, the Lucan Formation and the Ballard Gravel, which have been assigned the categories Lm, Li and Lg respectively, i.e. locally important aquifers. An assessment of vulnerability of this groundwater by contaminants, including cryptosporidium, indicates that the preliminary vulnerability ratings across the catchment range between moderate to extreme. Other supplies of drinking water come from Lough Lene and from groundwater abstraction points throughout the County.

## Wastewater Treatment

Westmeath County Council is responsible for provision of a water network serving over 14,000 households and sewerage facilities to over 8,000 premises in the County, with 16 separate sewerage systems in the county<sup>∞</sup>. The effluent from the sewerage treatment plants is monitored by the Council.

According to the 'Wastewater Treatment Plants in the north of the County: Assessment of Performance and Effluent Results' Report produced in 2004 by Westmeath County Council, the performance of the Wastewater Treatment Plants in the northeast of the County were broadly similar to that of 2003 with the exception of Killucan. Killucan improved considerably as a result of the opening of the new plant in April. The Mullingar plant continues to give excellent BOD results, however, the effectiveness of Phosphate removal declined from 95.5 % in 2003 to 92 % in 2004. Results from the smaller housing and amenity plants such as that at Donore, were variable for the most part with Milltownpass not working properly throughout the year<sup>∞</sup>.

The Water Services Investment Programme 2005 – 2007, estimated the total cost of all schemes in the programme at €230m. The following is the position with regard to progress on Capital Schemes in Westmeath during the year 2005.

Schemes completed include the Lough Owel Water Treatment Plant and the Moate Emergency Water Supply Extension.

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<sup>∞</sup> From "The Quality of Drinking Water in Ireland: A Report for the year 2004", EPA

<sup>∞</sup> Westmeath County Council, 'Assessment of Groundwater Vulnerability in the Lough Owel Catchment', 2003

<sup>∞</sup> Ref: National Urban Wastewater Study 2005

<sup>∞</sup> Waldron, John, 'Wastewater Treatment Plants in the north of the County: Assessment of Performance and Effluent Results' Report, 2004 for Westmeath County Council

### **Mullingar Waste Water Treatment Plant**

Population growth projected for Mullingar in particular, will place increasing pressure on the sewage treatment system and this in turn will increase the vulnerability of Lough Ennell and the River Brosna to pollution. To address this situation a new Mullingar Sewage Treatment Plant and 1st Phase of Network Improvement will be in place by the end of 2008.

### **South Westmeath Water Supply Scheme**

Due to increased population growth a new water scheme is proposed to meet demand. This scheme is planned to abstract water from the River Shannon at Killinure Lough and pump the raw water to a water treatment plant at Portaneena. From this water treatment plant, the water will be pumped to reservoirs at Carraun Hill, Annagh, Knockdomney, Coolatore and Rochfortbridge. This scheme will assist in conserving water supply from the Lough Owel source for population growth areas in other parts of the county. It is proposed that the scheme is to be carried out in three phases; short, medium and long-term works.

### **Rural Water Programme**

The rural water programme covers the provision/improvement of water supply in accordance with the Rural Water Strategic Plan.

Provision of new/upgrading of existing Group Water Schemes was allocated €500,000 and "Taking in charge" of Group Schemes, €111,000 in 2005.

### **Small Schemes Programme**

The Small Water and Sewerage Schemes is funded 75% by the DoEHLG. and 25% from the Council's own resources. The Council's allocation from the Department under this heading in 2005 amounted to €750,000.

### **Individual Water Supply Grant**

Grants of up to 75% of the cost of provision/improvement to a water supply to a maximum of €2031.58 are available for domestic water supplies. All grants paid by the Council under this Scheme are fully recouped from the DoEHLG<sup>∞</sup>

The Urban Waste Water Treatment (UWWT) Regulations 2001, in general, prescribe secondary treatment for all wastewater discharges. Appropriate treatment will depend on local circumstances and will vary from simple physical processes to physical/biological or physical/chemical processes with varying performance standards depending on the quality objectives of the receiving waters. More stringent treatment is required for agglomerations discharging to sensitive waters; agglomerations with a population equivalent greater than 10,000 discharging into sensitive waters or the catchment of sensitive waters require nutrient reduction facilities. "Sensitive areas" refer to freshwater bodies that are eutrophic or which may become eutrophic if protective action is not taken; surface waters intended for the abstraction of drinking water which contain more than 50 mg/l of nitrates; and areas where further treatment is required, to comply with other Council Directives.

## **Phosphorous Regulations Implementation Report**

A summary of surface water quality status in Westmeath was given in the third National Implementation Report published by the EPA on the **Phosphorus Regulations** prepared in 2005. The report has been prepared from information and water quality data submitted by local authorities in their Implementation Reports and from water quality data collected by the Agency in the 2001-2003 period.

The report showed that there was one county river with a seriously polluted station in the period 2001-03, ie the River Brosna and this same river had 5 moderately polluted stations. A number of other rivers in Westmeath had moderately polluted stations, eg Riverstown, Moate Stream, Black (Westmeath) and Gaine River.

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<sup>∞</sup> Westmeath County Council, Annual Report 2005

Overall, a small but significant reduction in the level of moderate and serious water pollution was reported. In contrast, there was a marked reduction in the number of monitoring sites with the highest quality unpolluted water. There are not many of these in the first instance. Local authorities were asked to commit resources to protecting these pristine waters as well as the ongoing focus on polluted waters.

The EPA Implementation Report points to a number of specific water quality factors in need of urgent attention. These include agricultural issues such as inadequate slurry storage, effluent discharges during wet periods, over-application and misapplication of fertilisers and overgrazing by sheep. Other problems highlighted include the absence of nutrient removal at inland sewage treatment plants, the impact of forestry, septic tanks, and the effects of the economic boom. The agricultural bye laws that have been adopted as well as the implementation of the River Basin District Management Plans under the Water Framework will be key to addressing these problems.

### **Groundwater Quality**

Groundwater is water that is held underground in the soil, in gravel and in pores or crevices in rock. Groundwaters are of importance as a water source for potable water for private wells, group schemes and local authority supplies and for use in a range of commercial activities from agriculture to bottling water for sale. Westmeath's groundwater reserves are an important natural resource for many reasons. The groundwater source for drinking water as a percentage of total supply is 20% in Westmeath; by comparison to 95% in Laois, 72% in Offaly, 50% in Tipperary North, and 15% in Longford. While the remainder of water supply is from surface water sources, the vast majority of people who are not supplied from public sources also depend on groundwater from group schemes and private wells. In addition, groundwater directly and indirectly contributes to, and sustains a variety of important ecosystems, the most important of which in Westmeath include turloughs; fens, in particular rich fens and flushes; and marl lakes. In many rivers, more than 50% of the annual flow is derived from groundwater and more significantly, in low flow periods in summer, more than 90% is groundwater. In this regard, the quality of groundwater is significant in terms of surface water quality.

Aquifers are geological formations that contain or conduct groundwater from which water supplies for wells, springs, etc. are often abstracted. In Westmeath there are sand and gravel aquifers near Moate, north of Athlone and to the east, and north of Mount Temple. A large gravel aquifer exists to the south of the county at Kilbeggan and the areas of important esker ridges. These sand and gravel aquifers are locally important as sources of groundwater, with the larger ones varying from local to regional importance. A large karstified aquifer exists to the north of the County at Lough Naneagh, which is considered to be a regionally important aquifer. A productive fissured bedrock aquifer that is locally important extends from the County boundary in the north east of the county, under Lough Lene and south west as far as Lough Owel. The importance of these aquifers will vary with their productivity and as such it is essential that aquifers do not suffer from over abstraction, where pumping rates exceed the recharge rate of the aquifer.

The sensitivity of an aquifer to contamination is based on the physical characteristics of the aquifer, the overlying geologic materials, and, for a specific contaminant, its chemical characteristics. "Sensitivity" is a relative term used to describe how well an aquifer is protected from infiltrating contamination. A highly sensitive aquifer would have little or no defence, whereas an aquifer with low sensitivity would be very well protected.

A shallow, unconsolidated sand-and-gravel aquifer is highly sensitive to contamination. This is because the physical characteristics of the aquifer permit rapid infiltration of recharge. Rapid recharge leaves little time for contaminants to degrade naturally or be adsorbed before reaching the aquifer. Conversely, a deep, confined, layered basalt aquifer has a very low sensitivity. Infiltrating recharge could take years to reach the aquifer, allowing time for contaminants to abate or degrade. The quality of this groundwater resource is generally good, though there are some problems with localised contamination of small borehole sources. However, recent years have seen increasing public concern about the risk of



pollution from various sources such as intensive agriculture, industrialisation, septic tanks and landfills.

The sensitivity of an aquifer can vary greatly, depending on geologic conditions. Fractured or faulted terrain tends to conduct recharge much more quickly than unfractured rock because fractures act as conduits for fluid flow. Hence, faulted or fractured bedrock aquifers tend to be highly sensitive. Limestone terrain that has undergone dissolution (dissolving) by groundwater often forms karst topography, which is characterised by sinkholes, caves, and rapid underground drainage. With its many conduits connecting the surface and subsurface, karst terrain makes for a highly sensitive aquifer.

If groundwater becomes contaminated the surface water quality can also be affected and so the protection of groundwater resources is an important aspect of sustaining surface water quality. Once groundwater contamination occurs, the consequences last far longer than surface water contamination (months, years and sometimes decades) because groundwater moves slowly. Remediation is frequently not practical or is very expensive. It is therefore preferable to prevent or reduce the risk of groundwater contamination than to deal with its consequences.

For groundwaters the pressures to be addressed include water abstractions, saltwater intrusion, diffuse sources and point sources. Point source pressures considered in relation to groundwaters include migration of pollutants from contaminated land, waste disposal sites and oil industry infrastructure and discharges to groundwaters from mines and soakaways.

Highly impermeable strata, such as silt and clay, provide a physical barrier above an aquifer. Aquifers that are overlain by thick sequences of silt and clay or unfractured bedrock tend to be less sensitive to surface activities.

Contamination of groundwater is generally attributed to bacteriological contamination from sewage systems including septic tanks and agricultural pollution. In short, vulnerability to such contamination depends on a number of factors:

- The determination of aquifer type is of fundamental importance and is the first task in assessing its qualitative and quantitative vulnerabilities
- Characteristics of the sub-soil and topsoil provide varying degrees of protection to ground waters and are an essential data set in assessing vulnerability. A portion of this data is available in Westmeath the more recent datasets are available from Teagasc.
- Land cover and habitat mapping are also good indicators for this stage in the assignment of vulnerability classifications. Land use directly affects the surface and groundwater environments through processes such as run off, infiltration and abstraction. Four land use types dominate the ERBD; these include agricultural, urban (artificial surfaces) and natural areas (forests and bogs).
- Depth to bedrock and water table are also important factors in the assignment of risk. Data sets relating to these factors are as yet unavailable to Westmeath County Council but will be available when the Geological Survey completes the survey for Westmeath.

Of particular importance to the initial characterisation of groundwater bodies are the 'overlying strata', or the geological materials overlying the water table in unconfined groundwater bodies and overlying the top of the geological unit forming confined groundwater bodies. These strata consist of soils (topsoils) and subsoils such as till, alluvium, lake and estuarine fine-grained sediments, peat and sand/gravel deposits. Identification of the general character of overlying strata is required to enable assessment of potential pathways of contaminants to groundwater, evaluation of the vulnerability of groundwater to contamination and analysis of recharge to groundwater.

The locations where ground waters are being abstracted for use are highlighted in attached map and these areas should be specifically protected from any risks.

The basis of national and European environmental policy is that pollution should be prevented at source. The local authority's planning control system is therefore an important element in

groundwater protection, by ensuring that developments are managed so as to prevent pollutants from entering groundwater. A practical and effective means of protecting groundwater and preventing pollution will be provided by the Groundwater Protection Scheme that is currently in preparation for Westmeath by GSI. This valuable resource is likely to be available during the lifetime of the reviewed Westmeath County Development Plan.

Any groundwaters that are considered vulnerable to pollution or at risk should be considered with sensitivity in formulating policy, especially policies relating to rural housing and industrial development, quarrying and intensive agriculture.

Aquifer Classification	Category	Code
Regionally Important	Karstified	Rk
	Fissured Bedrock	Rf
	Extensive Sand/Gravel	Rg
Locally Important	Sand/Gravel	Lg
	Bedrock - Generally Moderately Productive	Lm
	Bedrock - Moderately Productive only in Local Zones	Ll
Poor	Bedrock - Generally Unproductive except for Local Zones	Pl
	Bedrock - Generally Unproductive	Pu
Pending Classification	Misc bedrock	pending

### Groundwater Risk and Vulnerability in Westmeath

Significant groundwater abstraction pressures or pressures affecting the water balance are caused by industrial or public water supplies. Groundwater bodies associated with dependent surface water ecosystems are considered to be particularly at risk. The groundwater dependent ecosystems in the County are Ballymore Fen (Shannon RBD) and Mount Hevey Bog (in Eastern RBD and whose catchment area within 100 m of arterial drainage). Groundwater Bodies Risk Assessment Results for Abstractions and Saline Intrusions showed that Lough Owel is in the 'probably at significant risk' category.

The significant groundwater diffuse pressures addressed in the risk assessments are nutrients from agricultural activities (including livestock farming, arable activities and intensive enterprises), nutrients from unsewered human populations (septic tanks) and dangerous substances from all land use sectors (including chemicals used in agriculture, chemicals contained in urban run-off e.g. oil/diesel from paved areas, and chemicals contained in household products). Again all surface water bodies associated with the groundwater bodies were considered in the diffuse assessment. The diffuse pressures assessment showed Mullingar town in the 'probably at significant risk' category.

In summary, most of the Shannon RBD area groundwater bodies within Westmeath are considered to be 'probably not at significant risk', or 'not at significant risk'. Mullingar urban area, Athlone urban area, a small area at Coole and a small area between Kilbeggan and Horseleap were considered to be 'probably at significant risk'. The Athlone west urban area was considered to be 'at significant risk' from groundwater pollution'. In the Eastern RBD area, only a small area at Lough Lene and another near Kinnegad were in the 'probably at risk category', with the remaining area being classed as 'probably not at risk' or 'not at risk'.

A Draft interim groundwater vulnerability map has recently become available to Westmeath County Council from the geological Survey of Ireland and the data is shown on the attached map. This shows that groundwaters that are extremely vulnerable to pollution are located to

the north of the County, around Ballymore and the hill of Uisneach and areas to the east of Lough Ree. Highly vulnerable groundwater reserves exist to the south in the area that is particularly rich in geodiversity due to the presence of important esker ridges and to the west from Athlone to Mount Temple. Highly vulnerable areas also exist to the east of the County as shown on the map. The remainder of the County is classed as of 'high to low' vulnerability, since it has not been extensively studied to date.

### Bathing Water Quality

The quality requirements for bathing water areas in Ireland are set out in the Quality of Bathing Waters Regulations 1992 (S.I. No. 155 of 1992) and subsequent amendments. These Regulations transposed the requirements of the EC Directive concerning the quality of bathing waters (76/160/EEC), the purpose of which is to ensure that bathing water quality is maintained and if necessary improved so that it complies with specified standards designed to protect public health and the environment.

The parameters which are required to be sampled and analysed under EU Directive (76/160/EEC) are the same as those prescribed under the National Regulations. However, unlike National compliance which includes all parameters, EU bathing water compliance is based on a sub-set of these parameters. The 5 parameters considered for EU compliance purposes are: total coliforms, faecal coliforms, mineral oils, surface-active substances, and phenol. The EPA Bathing Water Quality in Ireland Report 2005 showed that all (three) designated bathing areas in County Westmeath were compliant with National and EU standards.

The new EU Directive 2006/7/EC on bathing water quality came into force on 24 March 2006 repealing Directive 76/160/EEC. Member States have until 24 March 2008 to comply with the provisions of the Directive. The new proposal is intended to deliver general benefits in relation to improved health-protection for bathers and a more pro-active approach to beach management, including public involvement. In terms of monitoring, the new Directive proposes to eliminate the tests for 19 different pollutant parameters and replace them with two bacteriological measurements, intestinal enterococci and escherichia coli, which focus specifically on the protection of human health. Compared with current standards, the proposed standards are intended to provide significantly higher protection against the risk of contracting gastroenteritis and respiratory diseases as a result of bathing.

The new Directive also aims to make more use of modern communication methods, such as the Internet, to inform the public about the quality of bathing waters and thereby allow the public to make a more informed choice on where to bathe. The bathing water quality standards specified in the new Directive are considered tougher than the present Bathing Water Directive.

**The Blue Flag** is a well-recognised, much respected eco-label, awarded to beaches and marinas with excellent environmental management and the system currently operates in twenty four countries. An Taisce which is a member organisation of the Foundation for Environmental Education is the responsible body in Ireland for the administration of the Blue Flag scheme<sup>∞</sup>.

To gain a Blue Flag; a beach must meet 26 criteria and a marina must meet 16 criteria covering water quality, beach/marina management, safety, services and facilities, environmental education and information. The Blue Flag for beaches is only valid during the blue flag season, which coincides with the bathing season (June to August). In addition to compliance with the requirements corresponding to those of the EU Bathing Water Directive there must be compliance with the standards and requirements for sewage treatment and effluent quality such as are contained in the EU Urban Waste Water Directive. There must be no industrial or sewage related discharges affecting the beach area.

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<sup>∞</sup> An Taisce - The National Trust for Ireland, <http://www.antaisce.org>

The Blue Flag awards are presented to beaches attaining levels of environmental excellence as determined by FEEE (Federation for Environmental Education in Europe) and relate to water quality, facilities for visitors, beach management, provision of environmental information and display facilities.

2006 awards for Westmeath were as follows:

- The Marina, Athlone has retained its Blue Flag status, which it achieved three years ago.<sup>∞</sup> It is managed by Westmeath County Council and is located right in the town on the Shannon.
- Killinure Point Marina, Glasson, which is managed by Quigleys and Waveline. It is located on the inner lakes of Lough Ree on the Shannon.

The Cut at Lough Lene, has lost the flag due to inadequate management which resulted in breaches of several criteria found during last summer's inseason inspection. The criteria in question cover environmental management, facilities and provision of information. Vandalism and litter are having a major impact on this bathing area. The Jury could not award the flag to The Cut for 2006 as it does not meet Blue Flag standards.

Lilliput at Lough Ennell has lost the flag due to inadequate management which resulted in breaches of several criteria found during last summer's in-season inspection. The criteria in question cover environmental management, facilities and provision of information. The Jury could not award the flag to Lilliput for 2006 as it does not meet Blue Flag standards.

## Fisheries

Loughs Ennell, Owel, and Sheelin are important and renowned wild brown trout fisheries that attracts tourist anglers from both within and outside Ireland. Lough Derravarragh was managed as a brown trout fishery up to the 1970's. Lough Sheelin and Lough Ennell are amongst the twelve lakes in Western Europe capable of supporting stocks of large brown trout. Lough Sheelin is known for its duckfly and mayfly hatch, whilst Lough Ennell produced the Irish record Lough trout and is noted for its game angling. Loughs Owel, Derraghvarragh and Sheelin also support stocks of course fish.

Fish need unpolluted water and abundant food in a habitat that provides spawning areas, shelter and freedom of movement. The bed and soil of a natural river and the associated aquatic and riparian vegetation combine to provide the food chain on which fish depend. A natural river channel is characterised by the morphological features which are vital for the life cycle of fish: gravel shoals or reed beds for spawning, pools and riffles where fish rest and feed, and turbulent reaches which enhance oxygenation.

Active flood plains are of importance in terms of flood storage and the prevention of siltation of the river channel and as potential habitat for fish and aquatic life. An essential role of the flood plain is to assist in the removal of nutrients from the water column, these nutrients regenerate vegetation in the flood plain, which is of importance to terrestrial species. Siltation of the river channel would have detrimental effects on fish survival as their gills can become clogged with silt, the survival of juvenile fish and fry is affected by suffocation, invertebrate (fish food) populations are also affected in the same way and the result is a decrease in bio-diversity.

Salmonoid Waters, under Directive 78/659/EEC include all waters within the catchment of the River Boyne, including the Riverstown, Deel, Milltownpass, Stoneyford, Kinnegad and Loughs Lene, Adeel, Bane and White. These waters are therefore considered sensitive as a result and it was recommended by the relevant Fisheries Board that they be protected.

Potential Impacts to Fish and Fish Habitat in terms of development include;<sup>∞</sup> barriers to fish passage due to blockages in watercourses either physical or hydraulic and water pollution

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<sup>∞</sup> <http://www.westmeathcoco.ie/services/environment/waterQuality.asp>

<sup>∞</sup> Eastern Regional Fisheries Board, 'Requirements for the Protection of Fisheries Habitat during Construction and Development Works at River Sites', 2005

due to sedimentation, cement, grout and concrete, or oil and fuels entering the watercourse which will impact on fish, their food and their habitat. The removal of bed material as part of development causes loss of in-stream vegetation and food and may destroy spawning or nursery habitats. The disturbance of riparian or river bank vegetation may result in loss of shelter and cover or loss of food, such as plant debris and vegetation invertebrates.

### **Flood Risk and Drainage**

The effect of global warming is increasing the incidence and severity of flooding and it is therefore increasingly important to take account of flood risk in spatial planning. While flooding is a natural phenomenon of the hydrological cycle, there are many man-made factors that influence flood behaviour, including frequency and intensity and the degrees to which an area can be at risk of flooding. Locating unsuitable development in an area at risk from flooding can lead to property damage, human stress and hardship, problems obtaining property insurance and consequential demands for the expenditure of local authority or central government resources on flood protection works. Any development that reduces the rate of absorption or increases the rate of runoff increases the risk of flooding of lands and properties downstream. The construction of protection works either at the time of the development, or at a later date, will incur additional costs, may not provide absolute immunity from the risk of flooding and can, if not appropriately designed, have detrimental effects on flood risk elsewhere.

Like other natural processes, flooding cannot be completely eliminated, but its impacts can be minimised with proactive and careful management of catchments and identified flood risk areas. Consideration of flood risk and the related impacts of, or on development throughout a catchment, rather than on a location-by-location basis, will facilitate sustainable development through the reduction of future flood damage, and hence reduce the potential economic and social costs outlined above. Development Plans (and subsequent Planning decisions) are key to this approach.

Under the Planning and Development Acts 2000-2006, Westmeath County Council may include in its Development Plan objectives regulating, restricting or controlling development in areas at risk of flooding. The County Development Plan aims to ensure that existing flood risks are either reduced or addressed and that any development does not individually or cumulatively give rise to new flood risk. The risk of flooding should be taken into account in all cases where development is being considered. A flood risk assessment should be carried out where appropriate and planning permission may either be refused or, if granted, can be made subject to conditions requiring the implementation of measures necessary to alleviate or avoid damage due to flooding.

The Office of Public Works (OPW) is responsible at a national/central government level for monitoring and addressing situations pertaining to flooding. A number of flooding related projects are currently underway by the OPW including the facilitation of a governmental review into flooding issues and management. The OPW are also involved in the preparation of historic flooding and flood risk maps. The attached 'Flood Risk' map shows areas and water bodies that experience or are at risk from flooding.

A 'flood envelope' from the 1999/2000-flood event of the River Shannon is shown on the map, which indicates the area inundated by this flood. The aerial photos on which this map is based were taken after the peak of the flood so additional areas that are at a slightly higher level may also have flooded. There may be a small number of islands within this envelope that were not flooded.

'Benefiting Land' is land that is subject to OPW drainage schemes. This land was, prior to the drainage schemes, low lying and poorly drained and probably at risk of flooding. The risk was reduced by the drainage schemes carried out under the Arterial Drainage Act, 1945 (Brosna, Inny, Boyne) but a significant residual risk of flooding remains in many of these areas. The design standard applied for the schemes was the three-year flood i.e. the land could flood once in three years on average after drainage.

'OPW Channels' are maintainable channels. The OPW requests that a 10m strip be retained from the top of the bank on both sides of these channels to allow for maintenance. This strip should not be paved or landscaped in a manner that would prevent access by maintenance plant.

'Drainage District Channels' are maintainable channels under the drainage districts and are maintainable by the local authority. Similar facilities for maintenance as required by the OPW may be appropriate at the discretion of the local authority.

The following lakes are used as buffering reservoirs by drainage schemes – of the Inny Catchment; Lough Kinale, Lough Derragh (Longford), Lough Derravaragh and Lough Iron; of the Brosna Catchment; Lough Ennell and of the Boyne Catchment; Lough Ramor (Cavan). No development, which would be vulnerable to flooding should be allowed within the original extent of these lakes, as defined in the 1900-1920 six inch map series, as water levels may be expected to rise to these levels periodically.

The flood plain is an essential component of the aquatic ecosystem. Active flood plains are of importance in terms of flood storage and the prevention of siltation of the river channel and as potential habitat for fish and aquatic life. An essential role of the flood plain is to assist in the removal of nutrients from the water column, these nutrients regenerate vegetation in the flood plain, which is of importance to terrestrial species. Siltation of the river channel would have detrimental effects on fish survival as their gills can become clogged with silt, the survival of juvenile fish and fry is affected by suffocation. Invertebrate (fish food) populations are also affected in the same way and the result is a decrease in bio-diversity.

The result of reclaiming flood plain areas would be the increased risk of flooding in other areas and flooding of new areas, which may not be as imminently suitable as the natural flood plain.

In general, development in flood plains increases the risk of flooding e.g. areas of land adjacent to the River Shannon, within the identified 'flood envelope'. Development should be restricted in such areas. Development should also be restricted on lands identified as 'benefitting lands' due to the significant flood risk in these areas. No flood-vulnerable development should be allowed within the original extent of any lakes that are used as buffering reservoirs by drainage schemes. Areas adjacent to channels should be reserved for maintenance of any maintainable channels identified.

Flood alleviation and drainage works have the potential to destroy fisheries habitat, but can be performed in a fisheries sensitive manner, if advice is sought from the relevant Fisheries Board. This has particular relevance to the River Brosna and River AI. When a river catchment is drained arterially, the tributaries and the main channel are drained. The aim is to allow water to flow off the land more quickly and to lower the water table in order to curb flooding and waterlogging. This involves physical removal of habitats such as spawning beds, large areas of riverside vegetation, trees, etc. The entire aquatic habitat of some streams may be damaged. Less obviously, the lowering of the water table allows areas distant from a drained river to dry out. In such situations, wetlands, with their characteristic fauna and flora, could gradually disappear.

In the '70s and '80s, some Westmeath river catchments underwent arterial drainage, and the impacts of these schemes are still being felt even thirty years later. The River Inny, which supplies and flows out of Lough Derravaragh, was drained as part of an arterial drainage scheme. Drainage lowered the water table, so that at the western end of Lough Derravaragh, extensive reed beds and swamps have been created, where formerly lake existed. More seriously, however, the drainage could result in major and irreversible damage to Garriskil Bog, allowing it to dry out gradually. The characteristic raised bog ecosystem would then cease to exist. Elsewhere in Westmeath, the lakeshore of Lough Ennell has also expanded as the lake contracted, due to drainage. The Blackwater, a tributary of the Boyne which rises in the eastern part of Westmeath, is still recovering from the effects of the arterial drainage scheme of the '70s, and salmon stocks in the Boyne catchment as a whole have not recovered to the numbers that existed prior to drainage.

No large drainage schemes are in operation now. Small scale drainage of bogs still takes place, although some of the more damaging drains in some sites, such as Garriskil, have now been blocked, allowing the bog to retain water that is vital for preserving its ecology<sup>∞</sup>.

#### **Do-Nothing Scenario**

The non-implementation of new standards or controls in terms of water quality control is not reasonable to consider since this issue is one that has already been determined at a higher policy level; Westmeath County Council is obliged under the Water Framework Directive to implement River Basin Management Plans and other water quality control measures. In this regard it is not an option to allow existing water quality trends to continue unless the trend has been towards an improvement or retention of water quality status

The development of currently zoned but undeveloped lands in Mullingar in particular, without provision for essential upgrading of wastewater treatment capacity would result in increased levels of phosphorous loading into Lough Ennell.

The development of currently zoned but undeveloped lands in Moate without surface water measures would result in flooding in Moate.

The continuation of use of SR6 standard recommendations published by the National Standards Authority of Ireland in 1975 (revised in 1991) which aimed to achieve satisfactory practice in the design, construction and maintenance of septic tank drainage systems, as opposed to using the more recently published Wastewater Treatment Manual, 'Treatment Systems for Single Houses', by the Environmental Protection Agency, as reviewed in 2003, would result in a continued use of out-dated standards.

In terms of flood risk, current Development Plan policy is insufficient to deal with development pressures over the coming years. Continuation of use of this policy would therefore be ineffective in ensuring that new development does not contribute to or exacerbate the effects of flooding. The result could be therefore that development that is vulnerable to flooding could be allowed in unsuitable areas, which could increase flood risk and impact upon sensitive habitats and result in damage to property and human health.

#### **4.2.4 Air and Climate**

##### **Air**

Section 4 of the Air Pollution Act, 1987 defines Air Pollution as follows "a condition of the atmosphere in which a pollutant is present in such a quantity as to be liable to be injurious to public health, have a deleterious effect on flora or fauna or damage property, or impair or interfere with amenities or with the environment."

Local Authorities have various powers under this Act including the issuing of notices under Sections 26 & 27 requiring measures to be taken to prevent or limit air pollution.

Emissions from road traffic are now the primary threat to air quality in Ireland (EPA, 2000). Nitrogen Oxides (NOx) arise from traffic emissions or any combustion process (e.g. incineration). Particulate Matter (dust) from heavy goods vehicles (HGVs) may have localised effects on air quality. Carbon Monoxide (CO) and Benzene mainly arise due to petrol combustion. Sulphur Dioxide (SO<sub>2</sub>) also arises from diesel engines including HGVs.

Emissions to air can also arise from waste management and this can be either due to direct emissions (landfill, thermal treatment, composting, anaerobic digestion) or indirect emissions (transports associated with waste collection or disposal). Types of emissions include landfill

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<sup>∞</sup> Hickie, 'Nature in Westmeath, A Wildlife and Habitat Guide', 2005

gas (methane, carbon dioxide), dust (including bioaerosols from composting), odour and noise.

Overall air quality in the Midlands Region is within EU limits (for Sulphur dioxide, Nitrogen Oxides and particulate matter. Air quality monitoring is carried out by the EPA and by the Local Authorities at Mullingar and Athlone for the region. At these sites SO<sub>2</sub>, NO<sub>2</sub> and PM<sub>10</sub> levels were within EU limits in recent reports<sup>∞</sup>. However Nitrogen dioxide and Particulate Matter are the air pollutants of concern due to levels occasionally exceeding EU limits in heavily trafficked areas.

Methane is one of the major greenhouse gasses responsible for climate change and has 21 times the global warming capacity of carbon dioxide. Under the Kyoto Protocol Ireland must meet targets to reduce greenhouse gases by 2013. Landfill gas is a significant source of methane and CO<sub>2</sub> and facilities are required to have gas management systems in place as a condition of their licence.

## Climate

The Midlands overall has an average rainfall of 800-1000mm per year, which can rise to 1600mm in the higher mountainous areas. The region gets approximately 175 days of rainfall annually and 1400 hours of sunshine. A weather summary produced by Met Éireann for 2003 for County Westmeath showed that in Mullingar total rainfall was 737.7 mm, average temperature was 9.8 °C and the average daily sunshine was 4.35 hours. The prevailing wind in Ireland is from a quadrant centred on west-southwest. These are relatively warm winds from the Atlantic and frequently bring rain. Easterly winds are weaker and less frequent and tend to bring cooler weather from the northeast in spring and warmer weather from the southeast in summer. The effect of global warming is increasing the incidence and severity of flooding and it is therefore more important to take account of flood risk in spatial planning.

### Do-Nothing Scenario

Continuation of recent trends in road building and the continued lack of adequate public transport services would encourage unsustainable transport patterns resulting in a continued trend of air pollution and climate change, which would act as a barrier to meeting our obligations under the Kyoto Agreement<sup>∞</sup>.

## 4.2.5 Geology, Soil and Material Assets

Material assets are taken to be infrastructure including settlements (towns and villages etc.), buildings and infrastructure, transport infrastructure and utilities as well as natural assets such as aggregates, geological formations, peatlands, watercourses and landscape. Many material assets and environmental elements such as cultural heritage, including architectural and archaeological heritage, landscape, biodiversity, flora and fauna have been identified as being worthy of protection or conservation or are valued for their amenity value or other qualities. Westmeath also holds a very significant material asset in its water resources including rivers, lakes and canals that are invaluable in terms of amenity and tourism potential as well as essential for the supply of suitable water for drinking. Any material assets that are not described in detail in this section are described in more detail in other sections of this report.

## Soil

Soil is a biologically active complex mixture of weathered minerals, organic matter, organisms, air and water, which provides the foundation for life in terrestrial ecosystems. Soil however, is not merely the sum of minerals, organic matter, water and air but a product of their interactions. It can be considered a non-renewable natural resource because it develops over very long timescales. A soil is distinguished from weathered parent material by the vertical differentiation it exhibits due to biological activity, so that the properties that are singled out in most systems of soil classification must be displayed in the soil profile.

<sup>∞</sup> Pilot Strategic Environmental Assessment of the Proposed Replacement Midlands Waste Management Plan for 2005-2010

<sup>∞</sup> National Climate Change Strategy, 2000



Westmeath contains a range of soils, which support various habitats, and land uses and provides valuable mineral resource potential. These soils can be impacted upon by water quality. According to the National Soil Mapping Project<sup>∞</sup>, Westmeath is predominantly covered by Acid Brown Earths/Brown Podzolics (AminDW) and Grey Brown Podzolics/ Brown Earths (BminDW). These soils are deep well drained mineral soils, and have medium to high organic matter content for the most part (Brown Earths) and are good all-purpose soils. The Acid grey Earths are normally of lower nutrient status but are generally good arable soils and can support high quality grassland nonetheless<sup>∞∞</sup>. Some surface water gleys and ground water gleys (AminPD and BminPD) are located to the north west and north east of the county and around in the flood plain of the Dungolman river west of Moyvoughly. This soil is deep poorly drained material and are generally considered to be relatively productive soils for forestry. However despite their physical shortcomings, they can have high potential for pasture production with good management and manuring. Much of the remaining area of the County is cutover or cutaway bog or fens. Cutover bog can potentially be reclaimed and used for grazing. Intact bog and fen sites are protected under EU designations in areas throughout the county for their biodiversity value and important natural heritage features, (see section 4.2.6 and the later part of this section entitled 'Peatlands').

### Waste Management Facilities

Westmeath County Council operates in accordance with the Midlands Waste Management Plan 2005-2010, which follows the principles of the 'reduce reuse recycle' campaign. A waste management hierarchy promotes, in order of priorities; 'Prevention and Minimisation', 'Material recovery (recycling/recovery)', 'Energy Recovery' and lastly 'Safe disposal' to landfill.

Within Westmeath, Ballydonagh Landfill, near Athlone is in operation. Marlinstown landfill near Mullingar has been closed. There are also a number of old, disused landfills within the County, some of which have been taken up for other uses and which are not causing any significant impact on the environment but some monitoring will be undertaken. Next year the EPA will be starting to look at these, under the latest EU Directive, 2007 – 2008. A Hazardous Waste Facility operated by Soltec is located at Mullingar Business Park, Mullingar, County Westmeath. A full list of Waste Licences granted can be seen in Appendix Three of this report.

The current status of Ballydonagh landfill is that at current filling rates there is 3 years capacity remaining. Westmeath County Council has applied for an extension, which will provide capacity until 2011<sup>∞</sup>.

A key issue is contamination due to leachate (liquid effluent from waste) where facilities are unlined. A leachate collection system in place to manage this issue. Surface water is monitored upstream and downstream of the site and on a drainage channel. Results indicated no affect on the local surface water. Groundwater Quality and Vulnerability tests showed some elevated ammonia, zinc and magnesium levels in 2003. A locally important aquifer exists at the location, which is generally moderately productive in local zones .

A temporary landfill facility was also operational at Marlinstown, near Mullingar which will be replaced by the purpose built Civic Amenity Recycling Centre, in Clonmore Industrial Estate, which is scheduled for completion in September 2006. Stage 1 of Marlinstown Landfill Restoration Final Capping work has been completed

Air Quality monitoring at this location showed that there were elevated CO<sub>2</sub> levels at certain locations, consistent with the migration of small volumes of gas away from the fill area. Landfill gas (LFG) is produced during the breakdown of organic components of waste by anaerobic bacteria with methane (CH<sub>4</sub>) and carbon dioxide (CO<sub>2</sub>) (in the ratio of 3:2). Both are greenhouse gases and methane in particular is a major contributor to global warming.

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<sup>∞</sup> Teagasc, EPA Soil and Subsoil Mapping Project, 2006

<sup>∞∞</sup> National Soil Survey of Ireland, Soils of County Westmeath, 1977

<sup>∞</sup> Midlands Waste Management Plan, Environmental Report, 2005

Gas collection systems can be put in place, to minimise the risk of gas migration, however two of the licensed facilities did not have LFG collection systems in place. Particulate Matter (dust) can also arise, however no exceedances were reported. Odour from landfill can be a cause of environmental nuisance, however there were no complaints from the public in 2003 in relation to odour or noise from Ballydonagh landfill.

It is estimated in the Midlands Waste Strategy 2005 that there could be up to 14,000 tonnes of waste in the Midlands Region that is unaccounted for, i.e. it is not arriving at a waste treatment or disposal facility. This waste is possibly disposed of illegally by burning or dumping. The EPA estimates that 93g of dioxins were generated in Ireland in 2000. Of this almost 73% were generated by uncontrolled burning. The main activity is illegal 'backyard burning'. Future dioxin emissions are predicted to increase to 110g in 2010. Dioxin levels in the Midlands Region are unknown, however levels are considered a problem on a national scale.

Illegal dumping in disused, or even currently used pits, is a constant problem. Since the polluter-pays principle has been introduced into Ireland, and households must pay for waste services, an increase in illegal dumping in pits has resulted.

Disposal wastes (farmyard or household) directly into the eskers, or onto the land on esker soils, is dangerous as the sand and gravel material is so porous, and contaminants can enter the groundwater quickly and contaminate the groundwater table and nearby wells. Problems include runoff from farmyards, septic tank systems and landspreading

Civic Amenity Centres are located throughout the County and the increase in usage of the two recycling centres continued with over 1,000 tonnes of recyclable material accepted in Athlone Civic Amenity Centre in 2005 with 20,562 visitors to the facility.

Overall 14,000 blue recycling bins have been delivered free of charge to the councils domestic customers. This delivery was accompanied by a major public awareness campaign and there has been a positive response from the customers of Westmeath County Council. An excellent quality refuse collection service was provided during 2005 and this resulted in a very low level of customer queries or complaints.

A pilot organic brown bin scheme was introduced to approximately 1000 householders in Mullingar during 2006. The purpose of the brown bin is to reduce the materials in your refuse bin and send your organic waste to produce a useful compost.

Environmental awareness is regarded by Westmeath County Council as a basic foundation of waste prevention and minimisation. Awareness initiatives are run on an ongoing basis.

Awareness Initiatives carried out in 2005 included:

- School & Community Visits (47 held in 2005)
- Teacher Seminar
- Green Schools Programme (48 registered in 2005)
- Race Against Waste 'Small Change' Business Waste
- Seminar with Athlone Chamber of Commerce<sup>∞</sup>

The Litter Management Plan for the county is currently being reviewed. This includes objectives for increased awareness and education.

## **Road infrastructure**

A very significant road-building programme has been taking place in the county over the past few years and is continuing currently. National routes running though the county include the N52, N62, N55 and N6 and recent motorway (M4) and dual-carriageway (N6) developments underway. These roads are national roads connecting opposite ends of the country but they have very significant implications for the county in terms of the landscape changes that have

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<sup>∞</sup> [www.westmeathcoco.ie/services/environment](http://www.westmeathcoco.ie/services/environment)

been brought about, the farmland that has been used up and the local aggregate deposits that have gone into their construction. These developments have also made the county more accessible and permeable. However they also facilitate travel by private car, which has implications for air quality and Irelands obligations in terms of meeting agreements under the Kyoto Protocol.

### **Rail network**

The towns of Mullingar and Athlone are positioned on the Dublin/Sligo and the Galway/Dublin/Westport rail lines respectively. Trains operate on each route several times daily. Currently there are no other train stations operating within the County although disused stations exist on the Dublin/Sligo line. In addition a potentially significant disused rail line exists from Mullingar to Athlone that could potentially service Moate and its catchment. The re-opening of this line has been considered by stakeholders involved due to the potential to create an important link between the Gateway towns of Mullingar, Athlone and Tullamore; Athlone and Tullamore on the Dublin Galway rail line and Mullingar on the Dublin Sligo line. In addition this would offer interconnection for travellers between these two mainline routes and be a particularly attractive option for commuters into and out of Dublin. The reopening of this line, which was closed in 1987, was considered in the Strategic Rail Review undertaken by Booz Allen Hamilton. Rail infrastructure, while influencing the landscape and landuse in the County, has the benefits of facilitating more sustainable forms of travel and the improvement of this material asset will have far reaching benefits to the environment long term.

### **Forestry**

Forestry has not been a significant feature in Westmeath to date. While small forested areas are dotted throughout the county a large proportion of these have been coniferous, not native forms. Non-native conifers were the logical choice for the plantations from the 50s onwards, since they thrived on the poor land that was available for forestry. However this type of forestry results in greater levels of acidification than native forms causing diffuse sources of water pollution as well as ecological change.

In recent years, and as better land has become available, there has been a slowly increasing emphasis on planting broadleaves, and Westmeath has one of the highest planting rates of broadleaves in the country. The species of trees planted has a bearing on the wildlife species that can exist in association with them, but the way that plantations are managed has an even greater effect. Some conifer plantations have developed into interesting wildlife habitats, particularly where they are mixed with broadleaves, where areas have been left unplanted within the plantation and where some of the main crop has been allowed to grow undisturbed. Large scale harvesting has a huge impact on wildlife, so the emphasis now is on minimising this impact through the adherence to environmental guidelines on harvesting.

Under the Irish National Forest Standard, 2000, all private afforestation projects now have to conform to a suite of environmental guidelines in order to be given consent. Under these guidelines hedgerows, wetlands, stream banks and existing woodland have to be retained and protected. Up to 15% of the plantation has to be set aside as open space and the retention of existing habitats<sup>∞</sup>.

### **Eskers**

The geology and geomorphology of Westmeath is characterised by limestone bedrock and extensive eskers and moraines particularly in the south of the county. Eskers are long, sinuous hills of sand and gravel that were deposited by rivers running under glaciers when Ireland was emerging from the grip of the last Ice Age. In Ireland, they were features unique to the Midlands. Traditionally, eskers were used as routes through bogland areas that were difficult or impassible by foot or horse.

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<sup>∞</sup> Hickie, *Nature in Westmeath, A Wildlife and Habitat Guide*, 2005

While eskers cover only a small part of south Westmeath, they provide the county with an extremely rich and valuable heritage. There are three esker systems of international importance, eight systems of national importance and substantial areas of good quality semi-natural esker habitats within the County. The Split Hills and Long Hills Esker is considered to be the best example of an esker in Ireland. It traverses the main Galway-Dublin Road, (the N6) mid-way between Kilbeggan and Tyrellspass. This esker has been designated a Special Area of Conservation, (see description below under Resources of Heritage Value). Part of the 'Split Hills/Long Hill' esker, which is of international scientific importance is publicly owned and thus allows for the development of public access. Other examples of eskers are Rahugh Ridge in the south of the County, which is covered for almost its entire length in woodland and contains some rare trees and shrubs and Murphy's Bridge Esker adjoining Rahugh Esker, which is cut by the Kilbeggan branch of the Grand Canal and is rich in wild flora.

The Council have undertaken an Esker Survey of the County, which has identified

- The nature, extent and condition of eskers
- The conservation value of each of those Esker Systems

This survey has shown that overall, there are 46 esker systems in Westmeath, covering 1,681 hectares or 0.91% of the area of the County. Esker density is greatest in the south of the County with some eskers extending into Offaly and Galway. The Esker survey that has been carried out for the County has shown that Westmeath eskers support 37 habitats and over 200 plant species<sup>∞</sup>.

The eskers can be subdivided into two groups with respect to their form, or geomorphology. These are the multi-crested profile, and the single crested profile.

Multi-crested eskers are usually wide, hummocky and have haphazard surface forms as they are formed from a number of joined-up ridges. Therefore, these may have a number of summits, shoulders, backslopes, footslopes and toeslopes forming individual ridges, which interconnect with discrete or complex humps and hollows across the overall esker area. The Mount Temple esker, with its hummocky surface and interspersed kettle holes, is an example of a multi-crested esker. Single crested eskers have a straightforward profile, comprising one ridge with a summit, shoulder, backslope, footslope and toeslope. The Rahugh Ridge is an example of a single-crested esker.

The eskers of Westmeath show stunning examples of the large number of esker systems that are distinctive landforms in the landscape of the Irish Midlands. The fact that they illustrate subglacial drainage of ice during the last deglaciation from two different ice sources, which moved in different directions, is somewhat unique.

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<sup>∞</sup> Tubridy, 'County Westmeath Esker Study', for Westmeath County Council, 2006



The eskers vary in height, size and profile type from low, voluminously-small, single crested eskers to high, large, multi-crested eskers. Compare the Bellfield esker (2 segments, single-crest; 5m-6m high; 150,000 tonnes of sediment deposited) with the Streamstown esker (19 segments, complex single to multi-crested; up to 10m high; 10 million tonnes of sediment deposited). A conservative estimate for the volume of material deposited by the glacial meltwaters in the Mount Temple esker for example, in County Westmeath alone, is 30 millions tonnes of sediment. The Mount Temple esker system, comprised of only four segments, covers an area of almost 2 square kilometres. Parts of the Mount Temple and Streamstown eskers have up to three individual ridge crests side-by-side in the esker. In fact, the geometry of the Streamstown esker is so complex that it is difficult to separate individual crests, humps and hollows from each other. This reflects a highly dynamic environment at the base of, and at the edge of, the glacier in that area.

The resource value of these eskers is exceptional. This is an extremely important educational resource and is reflected in the fact that many glacial geologists from abroad have studied the eskers of Westmeath. The volumes of sediment show clearly the power of the meltwater at the base of the ice. Their internal structure (bedding and size of clasts) provides a detailed record of fluctuating meltwater flows over time. Many geology and geography departments from Irish Universities, as well as Universities abroad (e.g. University of Sheffield, University of Amsterdam, University of Stockholm), visit these eskers with students for teaching purposes, and to carry out geological research, on a regular basis.

In terms of 'geodiversity' interest, Cullinamayor Hill, Split Hill, the Clara esker and the Rahugh Ridge esker systems are especially important in their conservation value with respect to interpreting meltwater flows at the end of the last glaciation in the Irish Midlands. Three of these four systems are high, long and continuous over a distance of tens of kilometres, and the Clara and Rahugh systems in their entirety extend into counties Offaly and Galway along distances of over 60 kilometres each. This in itself is remarkable, but the fact that the three systems converge into a single point in County Westmeath, which is a triangular area of sand and gravel in Garryduff and Monrath townlands at the edge of Derrycoffey bog, means their geometry is particularly special. These three eskers have been cited as sites of National

Importance with respect to the last Ice Age, by the Geological Survey of Ireland's Conservation of Geological Heritage Expert Panel for the Quaternary theme. They may, during the assessment phase of the process, achieve a ranking of International Importance.

Tunnels in which the Mount Temple, Horseleap, Race Course, Kilbeggan and Cappalahy esker systems were deposited also all fed into this triangular area at Garryduff-Montrath to their east. From this, these eskers are also of interest as they comprise smaller 'tributaries' within the overall subglacial esker 'river' system.

Of the eskers trending north-south, the Streamstown esker is of particular geodiversity interest, purely for its complex form and geometry. It includes portions which are single crested, multi-crested, has in places several esker segments side by side, esker segments that 'emerge' out of the high hill to its east, anastomosing patterns (i.e. criss crossing and forming a network), interspersed dry kettle holes, interspersed flooded kettle holes, individual flanking kames and also adequate exposure in disused pits and scars in order to study its internal form and soils.

As well as being of importance for geodiversity and biodiversity, the eskers define the local landscape. In landscape terms they provide a striking imprint of the glaciers last actions at the end of the last Ice Age; a footprint of the drainage system at the base of the ice. The landscape importance of eskers and their obvious potential for tourism, education and scientific interests has resulted in suggestions to establish a Geopark in the Irish Midlands to utilise these unique resources.

Eskers also contain significant reserves of water and are classified as 'locally important' aquifers by the Geological Survey of Ireland. Where they connect with other sand and gravel areas they may host enough water to be able to supply regional water supply schemes and many households obtain their water supplies from such aquifers. However as well as being important sources of freshwater, they are classified as 'extremely to highly vulnerable' to groundwater pollution because their constituent sands and gravels are very porous.

Intact eskers are now rare as many have been exploited for their readily available supplies of sand and gravel, for land reclamation in the 19<sup>th</sup> century and for construction in the 20<sup>th</sup> and 21<sup>st</sup> centuries. Some eskers in Westmeath are still being quarried for this purpose. While harvesting these reserves as a source of aggregate to the building industry may offer a solution for major building projects in the short term, the long term implications of the exploitation of this non-renewable resource can result in loss of landscape character, and irreversible impacts to the biodiversity and scientific value of the geological systems involved.

Extractive industries and quarry developments have already removed or seriously injured the geodiversity and biodiversity value of a number of valuable features in the County. The Mount Temple esker for example, already hosts two such industries.

In conclusion, the eskers in the area of County Westmeath provide wonderful and unique scientific examples, which offer exceptional aesthetic, recreational and educational value. The sites are important in this sense geologically, archaeologically, historically, culturally and ecologically. They are therefore considered highly sensitive to injurious forms of development.

## Peatlands

Peatlands are a very characteristic habitat in Co. Westmeath, with raised bogs being a prominent and typical feature in the landscape. They presently account for about 9% of the total area of the county, although the original extent of peatland was over 20% of Co. Westmeath<sup>∞</sup>. Peatlands are important from many perspectives. They have been a source of turf for domestic fuel for centuries. Since the 1940s, the industrial peat harvesting industry has been a key factor in the economic development of the county. Peatlands are a huge repository of information of past climate and vegetation and contain valuable archaeological information.

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<sup>∞</sup> Fossett, J. 'A Guide to Habitats in Ireland', The Heritage Council, 2000

The ecological value of peatlands is also recognised in European terms and various categories are protected under the EU Habitats Directive (EC Council Directive on the Conservation of natural Habitats and Wild Flora and Fauna, Directive 92/43/EEC). Active Raised Bog is listed as priority Annex I habitat and has the highest protection. Degraded Raised Bog that is still capable of regeneration and Alkaline Fens are also Annex I habitats. Species found on peatlands that are protected under Annex II of this Directive include the otter (*Lutra lutra*), marsh fritillary butterfly (*Euphydryas aurinia*) and the whorl snail (*Vertigo geyeri*). Peatlands provide habitats for a range of birds such as Greenland white-fronted goose (*Anser albifrons flavirostris*), merlin (*Falco columbarius*) and golden plover (*Pluvialis apricaria*). These are listed for protection under Annex I of the EU Directive on the Conservation of Wild birds (79/409/EEC).

Exploitation of peatlands has been much greater in other countries in mainland Europe over the centuries. Ireland is fortunate to have still a relatively large peatland resource. Ireland contains a significant percentage of the intact raised bog resource remaining in Europe and has some of the best examples. However, development pressures on raised bogs are intense and as a result they are in steady decline especially for the past 50 years. With good planning it is possible to protect the best of what is left, restore areas that are capable of regeneration and facilitate degraded bogs for new habitats and uses. The main threats are as follows.

Peat extraction has been the greatest cause of loss and deterioration of peatland habitat. In recent times, since the 1940s, the greatest loss of bog habitat is due to large-scale industrial peat extraction for energy production and to a smaller extent for horticulture. Drainage is a prerequisite for industrial peat extraction and this is where the damage is done at the early stages. Of the 19 Bord na Mona-owned bogs in County Westmeath, 17 are in active peat production, one is in the early stages of peat production and only one (Derryarkin bog) is fully cutaway. Its new use will be for extraction of sand and gravel which occur beneath the former bog.

Afforestation on peatland destroys the original habitat through drainage, tree planting and establishment and often nutrient enrichment due to fertilizer application. Conifer plantations are a common occurrence on bogs. Since the establishment of Coillte, the semi-state forestry company in 1989, the rate of forestry activity has increased, driven by EU grant aid, which has also encouraged private afforestation. Approximately 2,200 hectares of Coillte lands in County Westmeath are on peat. Both the Forest Service and Coillte are applying the concept of sustainable forest management practices. Most of the afforestation on peat is now on cutover or already degraded bogs as the deeper, wetter peat is less suitable for growing conifers.

Small-scale illegal dumping of waste is widespread in areas of cutover bogs and along access roads and tracks to bogs. This typically includes domestic, agricultural, builders' rubble, construction waste and old cars. It is unsightly and there is the risk of nutrient input to the peatland water supply. Under the Waste Management Act 1996, landowners are responsible for any dumping on their lands. Westmeath County Council has a policy to trace owners of land where there is illegal dumping, but it is often difficult to trace owners of bog land which may be held in commonage.

The Material Assets map attached shows the following categories of peatland:

Intact bog ('unexploited bog') - Remaining viable intact raised bog is an internationally important habitat. Active raised bog is listed as a priority Annex I habitat under the EU Habitats Directive and should be legally protected.

Cutover bog ('exploited bog') can give rise to a range of habitats, depending on the condition of the peat and its hydrology. Further work will need to be done to classify the cutover to see if it is capable of bog regeneration. Degraded bog capable of restoration to raised bog is also an Annex I habitat under the Habitats Directive.

Cutaway bog ('exploited bog') - Most of the cutaways which are being exploited for industrial peat production are still being harvested. Peat harvesting is ongoing and may continue for

up to 30 years depending on the depth of peat still remaining in the bog and the demand for the product. Finally when extraction ceases, cutaway bogs represent a huge natural resource for future use.

Fen - Many fens are in serious danger. They are often small sites or marginal to raised bogs or waterbodies. So many of them have already been lost through drainage and land reclamation for agriculture.

#### **Do-Nothing Scenario**

The 2002-2008 Development Plan policies in relation to quarrying and the extractive industries do not firmly exclude such development from areas of geological or geomorphological importance due to a lack of supporting data. The information has since been collated through an Esker Study and without the integration of this information into policy; additional extractive industries or quarry developments in important esker systems may be permitted.

Since the Midlands Waste Management Strategy automatically becomes part of the County Development Plan, continuation of waste policies in the existing plan without taking account of the Strategy is not a viable option.

Many intact bogs and fens of conservation value are preserved through European designations, however there are areas of intact bog that are not formally protected and these may come under pressure for development.

Continued policies of road building and a lack of adequate public transport facilities has been discussed above in section 4.2.5

#### **4.2.6 Biodiversity, Flora and Fauna**

Biodiversity can be defined as the variability among living organisms including terrestrial, marine and other aquatic ecosystems. Loss of biodiversity reduces an ecosystem's ability to recover from natural or human impacts. Biodiversity can include diversity within species, between species and of ecosystems and is often discussed under the headings habitats and species. In Ireland there are a number of categories of protected areas for the conservation and protection of flora and fauna. These are outlined below:

Sites of International Importance include; Candidate Special Areas of Conservation (cSACs) protected under the EU Habitats Directive (92/43/EEC), established for the conservation of natural and semi-natural habitats and species of flora and fauna and; Special Protection Areas (SPAs) for the protection of birds were established under the Birds Directive of the EU in 1979. Sites of national importance are proposed Natural Heritage Areas (pNHAs) and are designated under the Wildlife (Amendment) Act 2000. The pNHA's, cSAC's and SPA's in the County are listed in Appendix Four and are shown on the attached natural heritage map.

In addition to the protected sites referred to, biodiversity also relates to species, habitats and ecosystems that are not designated, but that may still have biodiversity value.

The details of Westmeath's natural heritage in terms of biodiversity, flora and fauna is listed below by habitat type, as recommended during the scoping stage of SEA. The habitat types are taken from 'A Guide to Habitats in Ireland', by J. Fossitt, for The Heritage Council, 2000.

#### **Freshwater**

Residents and visitors alike identify Westmeath by its beautiful lakes. Lough Ree is the third largest lake in Ireland and is shared between Westmeath and neighbouring counties Roscommon and Longford. There are four other large lakes, Loughs Ennell, Owel, Derravaragh and Sheelin and a larger number of small lakes. The larger lakes are noted for their waders and wildfowl, while nearly all of the county's lakes are valued as trout fisheries.

Most of Westmeath's lakes are part of the overall Shannon catchment which includes the River Inny and the River Brosna. Lough Lene and Lough Bane are part of the River Boyne catchment.



Westmeath's lakes and rivers are rich in aquatic life, but the areas surrounding them, the lake shores and river banks, are also vitally important for sustaining the entire ecosystem. River banks and lakeshores tend to have more natural or wild vegetation, which is valuable in itself and important for the species of animals that live there. This natural vegetation sustains a host of invertebrates, such as mayflies, stone flies, caddis flies and dragonflies that can be seen dancing above the water in spring and summer, on which fish, amphibians and birds feed.

Many of these water resources have been afforded protection as National Heritage Areas, Special Areas of Conservation or Special Protection Areas as described below and in Appendix Four.

Lough Ree is considered a national treasure and about one third of the lake lies within Westmeath. The shoreline is heavily indented, with sheltered bays and inlets, and can be accessed by a number of usually narrow roads. All of the shoreline is part of the Lough Ree Special Area of Conservation, underlining its importance for a rich variety of wildlife. The lake has 52 islands of varying sizes, and nearly all of them have some woodland cover. Since the islands are now for the most part uninhabited, they are important wildlife refuges, relatively free from disturbance, especially for ground-nesting birds.

Common Terns nest on some of the islands, a species listed on Annex I of the European Birds Directive. The lake provides an excellent breeding habitat for wildfowl, including Common Scoter, a rare breeding species listed as "Endangered" in the Red Data Book. Otters, rarely seen, are also present.

The lake itself contains one of only two populations of the endangered fish Pollan (*Coregonus autumnalis*), which resembles a herring in size and shape.

The flora is as varied and interesting as the fauna. Among certain rare or protected species are Narrow-leaved Helleborine (*Cephalanthera longifolia*) and Betony (*Stachys officinalis*) found in Hare's Island. Buckthorn, a native tree which is uncommon in Ireland can be seen on the lake shore.

White Lough, Ben Loughs and Doo Lough are four lakes that nestle in a shallow valley in the north of the county, a few kilometres north of the historic village of Fore. Botanically, the lakes are interesting because their beds are carpeted with a mat of stoneworts, which resemble water weeds, but are in fact large algae. The stoneworts are encrusted with white lime deposits from the calcium-rich water, giving them a crusty texture (from whence the name 'stonewort' comes). This abundance of stoneworts is unusual because they are vulnerable to pollution and disturbance. Some of the species are listed in the Red Data Book. The lakes are also home to the White-clawed Crayfish, now scarce and protected under the Wildlife Act and Habitats Directive.

Lough Derravaragh fed by the River Inny, which also drains the lake on its way to Lough Ree. The lake is an important site for wintering geese, swans and diving ducks. A flock of Greenland White-fronted Geese use the lake for roosting. At the western end of the lake, there are extensive reed beds and swamps. The swamps are dominated by sedges and other flora including Nodding Bur-Marigold (*Bidens cernua*) and Trifid Bur-Marigold (*Bidens tripartita*). At the south-eastern end of the lake, Knockeyon and the other hills support native deciduous woodland.

Further information of Westmeath's lakes is given in the lake management section of the County Development Plan and in the attached Appendix in relation to their conservation status.

The Royal Canal flows through Westmeath and this stretch was constructed between 1805 and 1830. Although it was not originally intended, the canal has become an important nature reserve as well as a boating thoroughfare. The water is relatively unpolluted and the structures built along the canal have become naturalised into the countryside. The canal boundaries have developed into hedgerows and scrub woodland and the banksides have evolved into little floral oases, free from herbicides and intensive management. The channel itself is fed from clean feeder streams and has been colonised by coarse fish, including Rudd,

Bream, Perch and Pike. Frogs and Smooth Newts are also present. Where the canal bridges have become enveloped with vegetation, they provide nesting and roosting spaces for birds and bats. Kingfisher, Grey Wagtail, Moorhen, Mallard, Mute Swan and Heron are the most commonly seen birds on the water, while the range of wildlife that also inhabits marshes, scrub and hedgerows can be seen along the banks and the canal boundaries.

### **Zebra Mussels**

Zebra mussels are one of the biggest invasive pests in the world's freshwaters. In 2002 a list was created of the world's one hundred worst invasive species which were chosen according to their adverse effects on biodiversity and zebra mussels (*Dreissena polymorpha*) are on this list. Zebra mussels can cause system-level changes in the ecology of rivers and lakes and lead to the extinction of many aquatic species in those. The zebra mussel also has the capacity to block in-flow pipelines that carry water through industrial facilities costing thousands of euros in maintenance and repair each year.

A review is being carried out by a Westmeath MA student on the effectiveness of the zebra mussel awareness campaign as carried out by the Western Region Zebra Mussel Control Initiative (WRZMCI). This study includes a comparison between a survey in the west of Ireland where an awareness campaign that has successfully kept zebra mussels out of four Loughs that are surrounded by infested waters and a survey of the area around Lough Sheelin (no campaign but zebra mussels present) and Lough Ennell (no campaign and no zebra mussels present) to ascertain the effectiveness of the campaign. Zebra mussels have been invading connected waterways throughout the country but for the first time, zebra mussels have recently been recorded outside connected waterways in Lough Derravaragh<sup>∞</sup>.

Through its development of a management strategy this study will contribute towards the protection of County Westmeath's local biodiversity.



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<sup>∞</sup> Waterways Ireland - <http://iwn.iwai.ie/v30i4/waterwaynews.PDF>

## Grassland and Marsh

The Shannon Callows, on the floodplain of the River Shannon south of Athlone town, is a unique wetland resource in the Irish Midlands of international importance and has been afforded EU Designations of SAC and SPA in this regard. The River Shannon flows alongside Westmeath's western border south of Athlone, for 7 kms. In the winter months, as the river swells with the winter rains, it floods the grassland alongside. This large expanse of shallow water welcomes thousands of wintering waterfowl and waders every year, including Whooper Swan, Bewick's Swan, Wigeon, Golden Plover, Lapwing and Black-tailed Godwit. When the floodwaters recede, in summer, they reveal lush, botanically-rich meadows which are either cut for hay or grazed by cattle. The Corncrake, now globally endangered, has been recorded here, and other rare birds may also breed here, such as Shoveler and Quail. Waders such as Curlew, Redshank, Snipe and Lapwing are regular breeders. Hen Harrier and Merlin may be seen occasionally, hunting during the breeding season. The Callows extend through Westmeath, Offaly, Galway and Roscommon and have been designated as a Special Area of Conservation. The continuation of this habitat is dependent on seasonal flooding, low intensity agriculture and the cutting of hay over silage production<sup>∞</sup>. Further information on the Shannon Callows is given in relation to its status as a designated site, in Appendix Four.

Other grassland and marsh habitats exist throughout the county, in river floodplains, close to the lakeshores and along the banks of the Grand Canal, with varied biodiversity values

## Peatlands

Ireland is the most important country in Europe for peatlands and county Westmeath has 15 peatlands designated for conservation. A Peatland Study has been carried out for Westmeath County Council, which describes the condition, value and characteristics of peatlands in the County. As already discussed in the Material Assets section, two types of peatland are found in Westmeath: raised bogs and fens.

### Raised Bogs

Raised Bogs are dome-shaped bogs which have developed in former lake basins. They are considered valuable and diverse wetland habitats as their rich diversity of flora and fauna are becoming increasingly rare in Ireland. Since their nutrient supply is obtained from rainfall, they are acidic and so only a very specialised and quite unique flora can survive there, dominated by sphagnum mosses and heathers.

If you walk across a relatively intact raised bog, you will usually pass through 'cutover' areas where peat is cut and where, in the summer, peat sods are left in piles to dry. You may have to cross some deep drains and climb up a steep bank before you meet the bog 'proper'. The outer part of the bog is often quite dry, and dominated by heathers. As you walk over the dome towards the centre, it becomes wetter, with pools, some of which can be quite deep and hazardous, interspersed with drier mounds, called hummocks. These are the areas in which the characteristic raised bog flora can be found.

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<sup>∞</sup> The Heritage Council, *Waterways Corridor Study: Lanesborough to Shannonbridge, 2004*





Cutover bog has its own value as a wildlife habitat, mainly because it is undisturbed and free from intensive management. After peat has been cut, the 'cutover' is gradually re-colonised by plants, shrubs and trees. Some cutover areas have a rich variety of wildlife.

Cutaway bog, on the other hand, is much less valuable for wildlife, since it has been cut by huge machines, creating a flat, 'brown desert', where nature is slow to recolonise.

The bogs of Co. Westmeath are used as refuges for the now rare Greenland White-fronted goose, which winters on the lakes. Other birds which can be seen on raised bogs include Red Grouse, Curlew, Snipe, Meadow Pipit, Skylark, Kestrel and Hooded Crow<sup>∞</sup>.

Garriskil Bog lies 3 km west of Lough Derravaragh and 3 km east of Rathowen. The site has a well developed system of pools and hummocks, characteristic of raised bogs. The most important flora here are Sphagnum mosses. On the drier hummocks, one can see Bilberry, while the pools contain plants such as white-beaked sedge and the great sundew. Bog asphodel can be seen growing among Sphagnum moss carpets, while common cottongrass grows away from the wetter areas. There is a rich lichen flora on the drier hummocks. The main threat to the site is the arterial drainage of the nearby River Inny, which could lower the water table and cause the bog to dry out.

Wooddown Bog lies about 4km east of Mullingar a few kms south of the Royal Canal. This bog also has an area of cutover, some of which is still being worked. Wooddown is much drier than Garriskil, with very few bog pools. Since the bog is drier, some birch woodland has colonised. On the northern edge of the high bog, one can see a flush and soak system. This is where mineral-rich water is present, helping to create a very different assemblage of flora, including Downy Birch, the aromatic-scented Bog Myrtle and Meadowsweet.

Due to their considerable value as sources of turf for fuel and horticultural products, the area of raised bogs being maintained as wetlands is reducing and intact raised bogs are now very rare all over Europe. 92% of raised bogs in Ireland have been cut away for peat or drained for agriculture and forestry over the centuries and as a result the remaining sites in Westmeath have an added significance.

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<sup>∞</sup> Hickie, 'Nature in Westmeath: A Wildlife and Habitat Guide', 2005

In 2004, Coillte began the process of restoring 571 hectares of raised bog habitat on its property in seven midland counties. 178 hectares of the project are in County Westmeath; comprising Carn Park Bog, 4 km north-east of Athlone, Crosswood Bog, 3 Km east of Athlone and a portion of Mount Hevey Bog, 5 km north east of Kinnegad. The project, which is due to be completed in 2008, is the largest single raised bog restoration project ever undertaken in Ireland and is supported through EU LIFE Funds as administered through the National Parks and Wildlife Service. The project will contribute towards maintaining our valuable wetland raised bog heritage.

Actions of the bog restoration project include:

- Felling and clearing of 450 ha of plantation forest, including naturally regenerated exotic trees on open bog in the project area;
- Block drains in order to elevate water levels and restore the hydrological balance of the peatland areas;
- Securing turbary rights to prevent further peat cutting;
- Perimeter protection of vulnerable raised bog against fire and
- Ongoing monitoring of vegetation and water levels.

Expected results of the project are that the area of open bog will be increased by 450 ha through the removal of conifers; there will be a significant improvement in the quality of the open bog areas due mainly to measures taken to re-establish natural water levels and there will be a measurable increase in actively growing raised bog species and over time active peat formation will be restored.

Peat extraction and associated drainage has been the biggest cause of loss of peatland habitat. Industrial peat harvesting is the biggest factor. Other threats include afforestation and illegal dumping.

## **Fens**

**Fens** are flat bogs, which are found around lake margins and in waterlogged areas where there is a supply of mineral-rich water and have a permanently high water level at or just below the surface. Its principal source of nutrients is from surface or ground water and the substrate is an alkaline to slightly acid peat soil. The vegetation of fens is diverse and usually dominated by sedges and brown mosses.

Fens are divided into two major groups based upon their topography and hydrology. These are topogenous fens and soilgenous fens:

Topogenous Fens are formed where the topography results in a basin-type water collection system with little water movement out of the system. There are three types as follows. Open water transition fens are those that occur on lake edges. These fens occur predominantly in limestone regions and can be quite extensive. Flood plain fens occur on a waterlogged floodplain of a river or stream such as those alongside the River Shannon and its tributaries. This fen type is now rare in Ireland, as many sites have disappeared as a result of arterial drainage. Basin fens form in waterlogged basins such as Scragh Bog as described below. This fen type is rare in Ireland and occurs mainly in the midlands. With time many basin fens have developed into raised bogs as the peat continued to accumulate. The basin fens that remain are important refuges for rare species of flora and fauna.

Soilgenous Fens are formed where sloping terrain provides a continuous supply of flowing water. There are three types of soilgenous fens as follows. Valley Fens develop on the floor of shallow valleys. The slope within these fens may be very gentle and water movement may not be immediately apparent. Valley fens are rare and occur mainly in the eastern part of the country. Flush Fens are small areas within other peatland types, mainly blanket bog. Within these areas the localised flow of water supplies more minerals than are found in the surrounding peatland and a fen develops. This fen type is widespread within blanket bog areas of the west of Ireland. Unusual communities of plants are found in these fens, more typical of arctic conditions. Calcareous Spring Fens develop around freshwater springs that are

especially rich in calcium. The water feeding these fens wells up from the ground and often deposits a white crust known as tufa on the ground vegetation. They are usually very small sites and often occur within larger wetland system. These fens are uncommon in Ireland.

Scragh Bog lies 10 km northwest of Mullingar, Co. Westmeath. Although it is called a bog, it is actually a fen, with very different vegetation to a raised bog. Apart from the mosses, the fen is dominated by Black Bog-rush, with long-stalked yellow-sedge, narrow-leaved marsh-orchid, Marsh Arrowgrass and grass-of-parnassus. The 'quaking fen' supports slender sedge, bogbean, water horsetail. Slender cottongrass, a protected species which is also rare in Europe, occurs here. Wet woodland, called 'fen carr' is dominated by willows, including the rare grey willow and by Downy Birch. Round-leaved Wintergreen, another Red Data Book species, is found amongst the fen carr. One of Ireland's rarest and most beautiful butterflies, the Marsh Fritillary, can be found here.

Fens have a high nature conservation value. There is a great diversity of plants and animals that inhabit fens and a number of these species are rare in Ireland and Western Europe. Some of these species can be described as 'relict' species. They were once widespread in Ireland but only survive in a few locations today such as marsh saxifrage and the whorl snail, *Vertigo geyeri*. Ancient fens of the midlands and lakeshores particularly around Mullingar count as some of the best European areas for many species of relict beetle.

Fen habitats are rare in Ireland today and are under increasing threat as a result of drainage, land reclamation and development. Fens are a relict habitat themselves as they were once widespread across Ireland but now have only a limited distribution.

Fens act in a number of different ways to regulate our environment. These functions include water purification, flood prevention, and carbon storage, which are becoming increasingly important since the realisation of global warming.

## **Woodland and Scrub**

### **Esker woodland habitat**

Eskers as discussed in detail in Section 4.2.5, are valuable not only as glacial geomorphological features but also for their distinctive native woodland and grassland. Since eskers are usually quite steep, they often survived agricultural improvement and the grassy slopes were used only for low intensity grazing. Since they were mostly free from herbicides and heavy fertiliser use, esker grasslands have a rich variety of interesting and colourful flora.

The ecosystem itself consists of all elements living in the esker habitat; the esker itself forms the basis for the ecosystem while water, air, plants and animals are the dynamic movements moving around within it. Especially noteworthy in this ecosystem are the flora and fauna. Furthermore, their thin, alkaline soils promotes rare plants. These woodland areas, promote an ecosystem that is considered unique nationally and internationally.





### **Native woodland**

Native woodland is scarce in Westmeath, as in Ireland in general. Patches of native woodland survive on some eskers, mentioned above, and around some of the lakes and rivers. Generally, these are quite small but are nonetheless extremely valuable, since there is so little of this habitat left. Native woodland, scrub and even some plantations are home to a variety of bird species, including some that are more easily heard than seen (e.g. Jay and Long-eared Owl)<sup>∞</sup>.

The following areas have native woodland of conservation interest:

- Shores of Lough Derravaragh

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<sup>∞</sup> Hickie, 'Nature in Westmeath: A Wildlife and Habitat Guide', 2005

Patches of deciduous woodland with native species such as rowan, hazel, oak and ash occur on the hills around the south-east corner of the lake. Some new broadleaf woods have been planted on the southern slopes of hilly land overlooking the lake.

- Shores of Lough Bane

Mixed woodland occurs along parts of the south and north shores. Species present include beech, oak, holly, Scots pine and European larch. In some areas, hazel is dominant, along with other shrubby species such as hawthorn.

- Shores of Lough Ennell

Mixed woodland of beech, ash, and downy birch fringes the lakeshore to the northwest. Bluebell and Lords-and-ladies are among the woodland ground flora.

- Shores of Lough Ree

Pockets of woodland are present around the lakeshore, including bog woodland with birch and alder buckthorn. Bird cherry and alder buckthorn are now scarce in Ireland, and the Lough Ree shore is one of the few sites where they can be seen. The woodlands and scrub around the lake and on the islands are a stronghold of the Garden Warbler a bird which is confined mainly to the Shannon Lakes.

- Along the Boyne and Blackwater

Wet woodland fringes many stretches of the Boyne and Blackwater where they flow through Westmeath, with ground flora typical of wet woodland, including Meadowsweet (*Filipendula ulmaria*), Angelica (*Angelica sylvestris*), Yellow Iris, Horsetail (*Equisetum* spp.) and occasional tussocks of Greater Tussock-sedge (*Carex paniculata*).

### **Planted deciduous woodland**

Mature deciduous woodland can be seen along much of the Boyne and its tributaries on the steeper slopes above the floodplain marsh or wet woodland vegetation. Many of these were originally planted in origin.

Elsewhere, small patches of deciduous woodland are scattered through the county on farms and old estates. These were usually of planted origin, and together with hedgerows and hedgerow trees, they dress an otherwise bare landscape. Their wildlife value is perhaps less important but nonetheless planted woodland provides shelter, cover and nesting spaces for species that would not otherwise occur. Some examples of old estate parkland and woodland are at Tullynally, near Castlepollard, and Belvedere House. Some of the best examples of different trees in Westmeath can be seen at both locations<sup>∞</sup>.

### **Conifer and mixed plantations**

Westmeath is not heavily forested. Some plantations of conifers and broadleaves occur south of Castlepollard and south of Lough Lene. Although these plantations are not as valuable for nature as native woodland, they should not be dismissed. Occasionally, forest clearings may reveal some interesting species such as the Nightjar, a secretive nocturnal bird which visits in summer. Other birds which can be seen in plantations include the Goldcrest, Chiff-chaff, various tit species, Sparrow Hawk and Long-eared Owl.

### **Hedgerows**

Each year, as the hedgerows come into blossom, we are reminded that spring has come and summer is near. Hedgerows are nature's corridors. Planted only a few hundred years ago, they give shelter and cover to a wide range of birds, some mammals and many invertebrates. Hedgerows have become naturalised into the countryside, and the patchwork tapestry they have formed is now very much part of the landscape of Westmeath.

Westmeath County Council completed a hedgerow survey in 2004, the first of its kind in Ireland. The survey revealed that the county has just over 10,000 kms of hedgerows. Five

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<sup>∞</sup> Hickie, 'Nature in Westmeath: A Wildlife and Habitat Guide', 2005



main types can be found: willow hedges, hawthorn hedges with few other species, hedges of hawthorn and blackthorn, hedges with many species, and gorse hedges. The most valuable hedgerows for heritage are those marking townland boundaries and roadside hedgerows. Townland boundaries are marked on the old 6 inch and 25 inch scale Ordnance Survey maps.

Hedgerows need some sympathetic management if they are to make good wildlife habitats — and stockproof barriers. Ideally, they should be kept quite tall and dense, with trees growing through them at intervals. Lack of management leads to tall, gappy hedgerows which may be neither good for farming nor wildlife. About one-half of the county's hedgerows are unmanaged, which could mean that they might be abandoned and eventually disappear. On the other hand, one-fifth of hedgerows are less than 1.5 metres in height, having been managed too severely. Neither of these practices help wildlife. Westmeath Co. Council is encouraging all those involved with hedgerows to take action to improve the county's hedgerow stock for the future.

## **Exposed rock and disturbed ground**

### **Abandoned quarries**

These are unlikely wildlife habitats, but nevertheless, some unusual and even rare species can be found in them. The Peregrine Falcon chooses old quarries as nesting sites, and this magnificent, once-scarce bird has colonised a number of such sites in Westmeath. Some rare plants of disturbed ground (ruderal species) find a foothold in quarries, especially old sand and gravel workings. Holes fill with water and become ponds, holding amphibians including frogs and newts, and dragonflies and damselflies. Some ponds have even been colonised by, or stocked with, coarse fish.

### **Cultivated land**

Wildlife can be found not only in lakes, woods and hedgerows, but also in the less glamorous environment of gardens. Gardens with plenty of cover and with little or no pesticides will attract birds and a variety of invertebrates, such as butterflies and moths. Berry-bearing shrubs and trees are valuable as food for hungry winter residents, such as Song Thrush and Mistle Thrush, and visitors such as Redwing and Waxwing, which will flock to Ireland during cold snaps in Scandinavia<sup>∞</sup>.

County Westmeath has many fine country houses, historic demesnes and estate lands. Demesne landscapes in particular are concentrated around the north east of the County. They contribute features of interest for their characteristic landscape and ornamental trees as well as their architectural design and associated elements that make up demesne landscapes including deerparks, gate lodges, follies and walled gardens. The future of historic demesnes depends on new uses being found for them that are sympathetic to their character and setting. There is much interest in developing them as hotels with associated golf courses and housing development.

## **Protected Features and Areas of Natural Heritage**

### **Natural Heritage Areas (NHAs)**

The basic designation for wildlife is the Natural Heritage Area. In 1995, proposals for over 1,100 NHAs were published, but it was not until December 2000 that powers were introduced for the statutory process of their designation and protection. Many of these NHAs have overlapping designations of SAC (see below) and/or SPA (see below), but there are currently 802 proposed NHAs which are not SAC/SPA. They cover an area of about 113,000 hectares. These will be reviewed, and other sites surveyed, during the course of the designation process. Some of the proposed NHAs (pNHAs) are tiny, such as a roosting place for rare bats. Others are large - a blanket bog or a lake, for example.

The Geological Survey of Ireland (GSI) is compiling a list of geological sites in need of protection through NHA designation. A committee of expert geologists choose the sites.

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<sup>∞</sup> Hickie, *'Nature in Westmeath: A Wildlife and Habitat Guide'*, 2005

These will be designated over a period of time, with the most "at risk" sites receiving protection first. The GSI has completed its list of karst (i.e. exposed limestone) and early fossil sites.

The process of formal designation of NHAs has now commenced. In December 2002, the process of protecting the first batch of Natural Heritage Areas began. To date 75 raised bogs and 73 Blanket Bogs have been designated.

### **Proposed Natural Heritage Areas**

Parts of County Westmeath of interest in terms of their natural heritage value and these areas have been proposed for designation as Natural Heritage Areas, other areas of natural heritage interest do not yet have such designations. Prior to statutory designation, proposed NHAs are subject to limited protection, under the Rural Environment Protection Scheme (REPS) plans which require conservation of NHAs and operate for a period of 5 years. Under the Wildlife (Amendment) Act, 2000 NHAs are legally protected from damage from the date they are formally proposed.

The list of these proposed Natural Heritage Areas is set out in Appendix Four. Policy in the Draft County Development Plan afford these areas a degree of protection from development that may injure their heritage value and it is committed that proposals for environmentally sensitive developments in these areas will be referred to Duchas for their comments.

### **Special Areas of Conservation (SACs)**

SACs are prime wildlife conservation areas in the country, considered to be important on a European as well as Irish level. Most SACs are in the countryside, although a few sites reach into town or city landscapes.

The legal basis on which SACs are selected and designated is the EU Habitats Directive(92/43/EEC), transposed into Irish law in the European Union (Natural Habitats) Regulations, 1997. These Regulations have since been amended twice with SI 233/1998 & SI 378/2005. The Directive lists (Annex I) certain habitats that must be protected within SACs. Irish habitats include raised bogs, blanket bogs, turloughs, sand dunes, machair (flat sandy plains on the north and west coasts), heaths, lakes, rivers, woodlands, estuaries and sea inlets. There is also a list (Annex II) of species, which must be afforded protection and for Ireland this includes the Bottle-Nosed Dolphin, Otter, Freshwater Pearl Mussel and Killarney Fern.

The Directive seeks to establish "Natura 2000", a network of protected areas throughout the European Community. It is the responsibility of each member state to designate Special Areas of Conservation (SACs) to protect habitats and species, which, together with the Special Protection Areas (SPAs) designated under the EU Birds Directive(79/409/EEC), form Natura 2000.

To date, Ireland has transmitted 413 sites to the European Commission as candidate Special Areas of Conservation. These cover an area of approximately 10,600 sq. km - a little over 30% of which is marine. Across the EU, almost 20,600 sites have been identified and proposed, covering an area of over 545,000 sq. km - a little under 15% of which is marine.

Special Areas of Conservation (SACs) that have been designated in County Westmeath are listed and detailed in Appendix Four and shown on the attached map.

### **Special Protection Areas (SPAs)**

The EU Birds Directive(79/409/EEC) came into force in 1979 and it requires each member state to designate "Special Protection Areas" for birds. The Directive contains annexes which are lists of birds which require particular conservation measures (Annex I), and also species which may be not hunted, and species which may not be sold. Annex I species include Whooper Swan, Greenland White-fronted Goose, Peregrine Falcon, Corncrake and Terns. Member states are also required to protect sites, which are important for migratory species such as ducks, geese and waders.

Some of the listed species conveniently occur in high numbers and densities. However others, such as breeding waders and birds of prey, occur at very low density where designation of sites is a more difficult, although necessary, exercise.

To date, 120 SPAs have been designated in Ireland. A further 7 sites have been notified to landowners. Approximately 25 SPAs are also designated SAC. The Irish SPAs join a total of over 4,200 sites covering over 380,000 sq. km across the EU. Species for which SPAs have been designated are listed on Annex 1 of the Directive

Special Protection Areas (SPAs) that have been designated in County Westmeath are listed and detailed in Appendix Four and shown on the attached map.

### **Nature Reserves**

A Nature Reserve is an area of importance to wildlife, which is protected under Ministerial order. Most are owned by the State. However, some are owned by organisations or private landowners, and persons interested in acquiring statutory protection for their lands can seek advice on this matter from the Department.

One Nature Reserve is designated in Co. Westmeath. This is at Scragh Bog, an area of 22.8 ha. This bog is situated about three miles north of Mullingar. It is the best example in Ireland of the transition from alkaline fen to acidic raised bog and one of the few remaining in Europe. It contains a large number of uncommon plants and insects which are rare in Europe. The bog is rated as being of international importance. The greater part of the bog was purchased by the Irish Peatland Conservation Council with funds generously provided by the Dutch Foundation for the Conservation of Irish Bogs. It was then handed over to the State for management as a Nature Reserve.

### **Ramsar Sites**

The following Ramsar Sites, ie areas of marsh, peatland etc that are protected under the Ramsar Convention of 1971, have been designated in County Westmeath:

Lough Derravaragh. 11/06/96; Westmeath; 1,120 ha; 53°40'N 007°20'W. A raised or cutaway bog with a shallow, alkaline lake and extensive reedbeds and swamps. Vegetation includes various aquatic plants dominated by reeds and sedges, several of which have a restricted distribution in Ireland, and deciduous woodland composed of native species. The site supports nationally important numbers of several species of waterbirds and provides valuable habitat for otter. Human activities include fishing, hunting, canoeing and water sports. Ramsar site no. 847.

Lough Ennell. 11/06/96; Westmeath; 1,404 ha; 53°27'N 007°23'W. A large, steep-sided lake fringed by calcareous grassland, wet marshy areas, reedbeds and mixed woodland. The site is of significance as a highly productive lake rich in its range of lower plants and invertebrate species. Its lakeshore habitats provide important refuges for waterbirds, as well as supporting rare or endemic flora. Ramsar site no. 848.

Lough Glen. 11/06/96; Westmeath; 81 ha; 53°25'N 007°23'W. A lake dominated by freshwater marsh and including reedswamp, wet and dry grassland vegetation, cutaway bog colonized by heath vegetation, scrub, wet willow woodland, exposed rock and fen. The site supports large numbers of Dabbling ducks and internationally significant numbers of Whooper swan. Ramsar site no. 849.

Lough Iron. 11/06/96; Westmeath; 182 ha; 53°37'N 007°17'W. The site, a long narrow lake with fringing marsh and woodlands surrounded by intensively farmed agricultural land, is one of the most important waterbird sites in the midlands. In addition to supporting large numbers of snipe and duck, there are internationally important numbers of Greenland White-fronted geese and Whooper swans wintering at the site that feed on the surrounding farmland. The marsh areas support numerous rare plant species. Ramsar site no. 850.

Lough Owel. 11/06/96; Westmeath; 1,032 ha; 53°35'N 007°23'W. One of the best examples of a large, spring-fed calcareous lake in Ireland. The lake and fringing wetlands support an outstanding array of rare plant species as well as bird and fish populations of considerable

interest. Adjacent farmland are feeding grounds for internationally important numbers of the Greenland White-fronted goose. Human activities include: water abstraction, intense fishing pressure and boating. Ramsar site no. 851

### **Protected Trees**

Trees provide great amenity value in the landscape and are also an important wildlife habitat. Many of the county's finest trees are found in old estate parkland and woodland such as Belvedere and Tullyally. Trees in urban settings add colour texture and structure to townscapes. Trees and their setting are under pressure from building and road development. Section 205 of the Planning and Development Act 2000 provides for the designation of Tree Preservation Orders and a number of trees are listed in the County Development Plan 2002 for such protection. This list is given in Appendix Five.

The Tree Register of Ireland, was set up in 1999 to compile a comprehensive database of remarkable trees in Ireland. The database now contains details of over 5,000 trees, many of which are national or county champions. Trees can be remarkable for many reasons: their height, diameter, age and for their historical and folklore associations. The list of trees noted as remarkable in Westmeath are listed in Appendix Five.<sup>∞</sup>

### **Hedgerows**

A survey was carried out on Westmeath's hedges in 2004 and found that hedgerows are under threat both qualitatively and quantitatively. Increasing urban and rural development and changing farming practices all impact on hedgerows and detract from their associated wildlife and landscape values. Townland boundary hedges and species rich hedges are particularly at risk. The National Biodiversity Plan states, "for the future, the overall goal should be no net loss of the hedgerow resource". The corridor role of hedgerows in facilitating the movement and distribution of wild flora and fauna through the landscape is significant.

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<sup>∞</sup> <http://www.treecouncil.ie/treeregister.html>



### **Other features of Natural Heritage**

Mushroom Stones are “water worn limestone blocks, eroded up to a certain height by the solvent action of former lake water”. An example of a mushroom stone is located in County Westmeath at Tullin and this shows “the level at which Lough Ree once stood, 10 to 15 feet higher than it’s present summer level”. This example, along with others in the region, show that the lakewaters once spread over a large area; probably over the whole of that now occupied by bog. Mushroom Stones are an important feature of landscape heritage as important features of archaeological, historical and ecological interest. They are important geomorphological features because of the information they contain about past landscapes and landscape change. However despite this they enjoy no formal protection of their own.

### **Do-Nothing Scenario**

Many of the above habitats and features have been afforded a level of protection due to European designations or Development Plan policy. However, without strengthened policy in relation to quarrying, removal of hedgerows, wind energy and flood risk for example, a number of habitats may come under threat in the future from development.



#### 4.2.7 Cultural Heritage, including architectural and archaeological



#### Architecture

##### Protected Structures

A number of buildings and other structures are considered to be of interest for reasons of architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest and are listed in the County Development Plan 2008-2013. Section 10(2)f of the Planning and Development Act, 2000 as amended makes the protection of architectural heritage mandatory.

##### **National Inventory of Architectural Heritage (NIAH) - ministerial recommendations**

Results from the most recent NIAH survey carried out at a national level have recently become available for Westmeath. The proposed reviewed Record of Protected Structures will take account of the ministerial recommendations arising from the NIAH surveys.

##### **Architectural Conservation Areas (ACA)**

Section 81 of the Planning & Development Act 2000 places a statutory obligation on Planning Authorities to ensure that all development plans must now include objectives to preserve the character of a place, area, group of structures or townscape that is of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest or value, or contributes to the appreciation of protected structures.

A number of Architectural Conservation Areas (ACA) have been designated in towns and villages in the County since the adoption of the 2002 County Development Plan. These designations have been reviewed as part of the Review and some new designations have been made in the Plan.

## Archaeology

Westmeath has a rich and diverse archaeological heritage; settlement here dates back over five thousand years, with almost 3000 known archaeological sites. The archaeological heritage is recognised within the CDP 2002-2008, but since its publication in 2002 there has been significant legislative change, which directly impacts on archaeology, namely the National Monuments Act 2004. In addition other new legislation that will indirectly impact on the archaeology of Westmeath would be the Critical Infrastructure Bill. Since the publication of the County Development Plan in 2002 there have been a series of Codes of Practice agreed between the Department of Environment, Heritage and Local Government and various industrial sectors including Bórd Gáis, the National Roads Authority, and the Quarrying Industry which provide a partnership model for dealing with archaeological works. One of the major benefits of the increased development has been the corresponding increase in the number of archaeological assessments, investigations and excavations, as a consequence of which there is now a considerable body of data. Archaeological excavations are usually only carried out where the option of preserving a site in situ is not available and it is necessary to destroy the site.

The recognised archaeological heritage of County Westmeath includes structures, constructions, groups of buildings, developed sites, all recorded monuments as well as their contexts and moveable objects both on land and underwater, according to the European Convention for the Protection of Archaeological Heritage, 1992. This means that the archaeological heritage is not confined to that which is included in the Record of Monuments and Sites, but also includes any archaeological site that may not have been recorded yet (i.e. not yet discovered) as well as archaeology beneath the ground surface and the context of any site.

The County Development Plan 2002-2008 sets out some specific development control standards in relation to archaeology. Policy includes a commitment to refer applications for proposed developments within Zones of Archaeological Potential and in sites on or abutting recorded Sites or Monuments to Duchas, the Heritage Service. Policy also includes a commitment that where a proposed development would result in significant ground disturbance within such areas, a comprehensive archaeological report will be required for assessment by Duchas and the planning authority. Furthermore, in all such cases, planning permission will also require that a licensed archaeologist be retained on site to monitor all site works, requiring the preservation of archaeological material where appropriate. There is also a requirement that development must cease immediately on the finding of any artefacts of archaeological interest and the planning authority and Duchas be notified.

General policies relating to the archaeology in the Development Plan and incorporated in the AhloneTown Plan 2002-2008 provide for:

- The protection of archaeological remains and their settings
- Archaeological Assessment and Evaluation to be required as appropriate prior to allowing development to take place
- Conditions to be attached to planning permissions ensuring that identification and mitigation of archaeological impacts of development
- Schedule 5 of the County Development Plan 2002-2008 lists 7 Zones of Archaeological Potential within which "development will only be permitted where the Council considers the importance of the proposed development or other material considerations outweigh the value of the remains in question".
- 15 National Monuments in State Care are listed in the Schedule 5 of the 2002-2008 Plan and these are protected under the National Monuments Acts (1930-2004) as amended.
- There are currently 17 Preservation Orders and 1 Temporary Preservation Order in Westmeath.

The County Heritage Plan contains a number of objectives for the protecting of the County's archaeological heritage. The Hill of Uisneach is identified as one of the most famous archaeological sites in the County and is of national importance. An objective is contained in both the Heritage plan and the CDP 2002-2008 to work on improving access to this site with the involvement of the landowners and relevant authorities.

In conclusion, the archaeological heritage in County Westmeath is considered generally well preserved. Some activities, such as road building projects for example can actually lead to the discovery of archaeological objects and procedures are in place through legislation to deal with these issues. The numbers of 'fulachta fiadh' or prehistoric cooking sites for example that are protected in the Record of Monument Places, has increased to almost 100 as a result of discoveries following infrastructural work. Developments giving rise to archaeological excavations are not limited solely to the major infrastructural works throughout the County. Excavations within our towns, whether as part of the broadband roll out or major commercial developments have unearthed enormous information about where and how people lived, about how people worked and about how people died. In addition to the 3,000 upstanding archaeological sites within the County, there are countless unrecorded sites. Many of these sites only become apparent in the course of development, be it of a road, a drainage scheme, a quarry, a commercial development or even a single house. Some sites are known about within the community because they are handed down in folk memory. The sites that resonate most strongly, and are therefore most likely to be remembered, are Children's Burial Grounds and these unrecorded graveyards of the 18th and 19th century are often situated at older archaeological sites. Recent excavations undertaken due to road projects have resulted in a number of findings of significance.

Underwater archaeology is a heritage aspect that has been in general poorly researched in the Westmeath area. Potential for underwater archaeology exists in Lough Ree near Athlone and in Lough Owel in particular. This issue should be further explored.

### **Fore Special Heritage Area**

The designation of Fore Village and its hinterland as a Special Heritage Area results from the realisation of its exceptional historical and archaeological importance and the enormous contribution that it can make towards the development of tourism within the County.

To this end the detailed policies in relation to siting and design of new development that operate in other High Amenity Areas are extended to the Fore Area (outside the villages of Collinstown and Fore). In particular, such development should not cause direct or indirect damage or interference to various environmental designated areas, archaeological monuments or buildings of artistic, historic or architectural value. The use of sympathetic materials and finishes is encouraged with regard to both new development and renovation of existing buildings in both villages.

The richness of the archaeological and historical remains of Fore Village, together with the attractive landscape in which they are set, mark this area out as one of national importance.





#### **Do-Nothing Scenario**

While our cultural heritage has been protected to a certain degree, there are features that may be of importance without the appropriate level of protection that may be come under threat. Detailed studies and reviews are necessary to ensure that our cultural heritage is afforded sufficient and appropriate protection, which are generally carried as part of the Development Plan review process.

### **4.3 SIGNIFICANT ENVIRONMENTAL ISSUES**

#### **4.3.1 Types and Patterns of Development that may raise environmental issues**

##### **Developments subject to the Seveso II Directive**

This type of development has been discussed in Section 4.2.2 and may impact upon risk to Health and Safety.

##### **Heavy Industrial Development**

'Bad Neighbour' development types such as construction and demolition waste recovery facilities etc, if unsuitably sited, may be injurious to the amenity of nearby residents. This is due to the nature of such development; it may result in noise disturbance, air pollution or excessive volumes of heavy vehicle traffic for example.

##### **Intensive Agricultural, Horticultural and Forestry Development**

Development such as piggeries, mushrooms and forestry may result in diffuse pollution to surface and groundwater. Such activities are described in further detail in the following sections.

## **IPPC and Waste licensed facilities and Other Potentially polluting development**

Local Authorities are consulted in relation to IPPC licenses as the majority discharge to municipal sewers and also to water bodies and air. Monitoring and enforcement is carried out in relation to the licences. Nationally, non-compliance notices are issued to approximately 35% of licensed facilities. Such developments therefore are potential polluters

Section 4 licenses are generally for trade effluents discharging to water bodies and are issued by local authorities. Section 16 licenses cover discharges of effluent to sewers. IPPC licenced activities in Westmeath are shown on attached 'General Environmental Vulnerabilities' map. Details of both IPPC licences and Waste Licences are given in Appendix Three.

Of these, four are classed as intensive agriculture; specifically piggeries. The are:

- Ballynagall, Knockdrin, north of Mullingar;
- Hodgestown Pig Unit, Killucan;
- Clondrisse Pig Farm, Killynan (Pratt), Cloghan, Delvin Road and
- Ballymanus Pig Unit, Castlepollard.

The piggeries in Knockdrin, Castlepollard and potentially the one in Killucan are located within areas of extreme groundwater vulnerability. In this regard it is imperative that such industries be monitored and regulated carefully. No such industries should be located within areas of high or extreme groundwater vulnerability in the future.

## **Afforestation or deforestation**

It is recognised that Ireland needs more trees to comply with European standards. In the past, non-native conifers have been the logical choice for plantations from the 1950's onwards, since they thrived on the poor land that was available for forestry. In recent years and as better land has become available, there has been a slowly increasing emphasis on planting broadleaves. Westmeath now has one of the highest planting rates of broadleaves in the country. The species of trees planted has a bearing on the wildlife species that can exist in association with them. The way that plantations are managed however, has an even greater effect. Some conifer plantations have developed into interesting wildlife habitats, particularly where they are mixed with broadleaves, where areas have been left unplanted within the plantation and where some of the main crop has been allowed to grow undisturbed.

Large-scale harvesting has a huge impact on wildlife, so the emphasis now is on minimising this impact through the adherence to environmental guidelines on harvesting. It is also acknowledged that large scale felling would result in a significant negative impact on the landscape and this issue is now addressed through forestry management plans.

Forestry also causes a diffuse source of pollution to water resources due to acidification that results from the planting of trees, especially non native species.

Coillte, the State Forestry Board has been awarded environmental certification, which commits it to a range of measures to protect wildlife and habitats on land and in its care. Coillte has identified 15% of the 5120 ha it manages in Westmeath for the primary objective of biodiversity conservation.

All private afforestation projects now have to conform to a set of environmental guidelines in order to be given consent. Under these guidelines, hedgerows, wetlands, stream banks and existing woodland have to be retained and protected. Up to 15% of the plantation has to be set aside as open space and the retention of existing habitats.

## **Dwellings Served by Individual On-Site Wastewater Treatment Systems**

On-site systems are the primary method used for the treatment and disposal of domestic wastewater in rural areas. These systems are also used in urban areas, which are not connected to public sewer systems. On-site systems are often located close to private or public wells.

When choosing the location and type of on-site system, developers should have regard to any nearby groundwater source, the importance of the groundwater as a resource and the vulnerability of the underlying groundwater.

Surveys in other parts of the country have shown that in many cases private effluent treatment systems do not function satisfactorily; are not properly constructed and in general are not properly maintained. Monitoring of treatment systems and enforcement of planning conditions in relation to treatment systems is particularly difficult and onerous on the local authority. Increasing numbers of such systems is a significant environmental issue.

#### **Abstraction for Dublin water supply**

Proposals are being considered to abstract water from Lough Ree and the Shannon to help supply the increasing Dublin population. This will have a variety of impacts that may be significant downstream of the abstraction, particularly in terms of an alteration of the nature of the entire water body and catchment, potentially affecting the ecosystem and habitats such as the Shannon Callows. However it is difficult to ascertain the level of impact at this stage or the potential significance of these. The proposed project itself will be subject to a complete Environmental Assessment in its own right in due course.

#### **Wind farm development or other alternative forms of energy production**

The following impacts can occur during and following the development of windfarms:

- Visual impact, landscape change
- The impact of noise levels
- The impact of electro-magnetic interference
- Ecological Impact
- Archaeological impact
- Construction impact
- Health & Safety
- TV interference
- Visual impact of new power lines in the locality
- Geological impact
- Hydrological impact
- Aircraft & navigation impact

The scale of the wind energy development, environmental designations, habitats and ecology and the amenity of nearby residents must be taken into account in considering such development, in addition to practical considerations such as wind energy potential, proximity to the electricity grid and infrastructural supports.

#### **Brownfield Development**

Town and village centre redevelopment, if designed appropriately and carried out with regard to the existing cultural heritage in the area, including archaeological potential and architectural character can result in the more efficient use of zoned and serviced lands in central locations for a higher density of residential development that can reduce the number of trips made by the private car.

#### **Infrastructural development, including road / motorway building**

Road projects, train lines, pipelines, water abstraction, wastewater treatment systems and other large-scale infrastructural developments give rise to significant environmental issues such as impact to landscape and natural features. A large proportion of such projects are not

initiated or executed by the Planning Authority and are subject to plans made at a higher level.

### **Landfill and Waste Disposal**

Continued trends in waste generation and disposal to landfill would have detrimental implications for the environment. The Midlands Waste Management Plan sets a strategy for reducing waste disposal to landfill. If not properly monitored and managed, landfills will impact upon soil quality, air quality and water quality. Illegal waste disposal and fly-tipping will have similar impacts.

### **Quarries and Extractive Industries**

There is a wide range of potential environmental effects caused by quarries. Such impacts may arise during the development stage (e.g. earth stripping operations) or may endure throughout the life of the quarry, possibly over several decades. The impact can be permanent, even after closure and decommissioning, unless carefully planned rehabilitation is undertaken. Potential impacts include:

- Damage to esker systems - as already stated these are valuable resources in terms of their geodiversity and biodiversity value. Quarrying and extractive industries are a threat as it destroys the esker itself and often leaves a scar on the esker landscape.
- Extractive industries are associated with many noise-generating activities, such as the removal of topsoil and overburden, excavation with machinery, drilling and blasting of rock, crushing and screening of aggregates, transport of raw materials and finished products within the site and on public roads, etc.
- Blasting (which occurs at stone quarries) can give rise to vibration, audible noise, flyrock and dust. The levels of vibration caused by blasting are well below those which can cause structural damage to properties. Nonetheless, vibration transmitted through the ground and pressure waves through the air ("air overpressure") can shake buildings and people and may cause nuisance. Audible noise accompanies overpressure.
- There are numerous sources of dust generation within quarries, including the stripping of topsoil, the excavation of sand and gravel, the crushing and screening of aggregates, ancillary activities such as concrete mixing, and the transport of sand, gravel and finished products (point emissions). Wind can carry dust particles well beyond the site boundaries, and fine materials from lorries can be deposited along public roads (fugitive emissions).
- The quantity, and physical and chemical quality, of surface waters and groundwaters may be affected by quarrying activities; flows can be increased or decreased and may be contaminated by runoff or dust from the quarry. The removal of topsoil, overburden and aggregates may affect the quality of water recharging to an aquifer, and excavation below the water table may lead to de-watering and pollution of adjacent watercourses and wells.
- Quarry restoration may add to the diversity of plants and wildlife. There are many options for restoration that enable land to be returned to an attractive and useful form. On the other hand, natural habitats can be damaged or lost entirely as a result of quarrying and extraction, and features such as hedgerows, stone walls and trees can be removed. Gravel extraction and quarrying activities have the potential to impact on areas of valuable habitat, including orchid-rich grassland on eskers, where they are in the vicinity of such habitats. Habitats outside the quarry site can be impacted on indirectly by dust deposition, alteration to groundwater or surface water supplies, or as a result of run-off or siltation.
- Aggregate workings can remove parts of an existing landscape, such as a hill, or can introduce intrusive features, such as quarry faces or overburden mounds.

- Traffic within the site and on adjoining public roads can give rise to potential adverse effects. Heavy goods vehicles can cause noise, exhaust fumes, vibration and dust and break up of road structure. Additional traffic generated by the development may cause congestion, particularly on rural roads in the vicinity of the site, and is a frequent source of concern to local residents.
- Quarrying could have considerable archaeological implications, which must be addressed, given that aggregate resources can only be worked where they exist. Since the archaeological heritage is a non-renewable resource the presence of known archaeological sites or the anticipation of potential sites must be an essential consideration in the selection of development sites, or major expansion of an existing site. Similar considerations apply in the case of protected structures in rural areas.
- Waste Management issues can arise with such development and best practice is to eliminate or minimise the production of waste. Quarry operators should ensure, by securing their site entrance and boundaries, that illegal fly-tipping and disposal of waste by third parties does not occur.

### **Peat Extraction**

Peat extraction results in the removal of habitat and features of biodiversity value, particularly intensive peat extraction as discussed previously.

### **Golf course development**

This type of development results in changes to the landscape due to landscape manipulation and the removal of demesne landscapes in particular has been a recent trend. It also inevitably results in a loss of habitats and biodiversity value on the site and the use of fertilisers and herbicides can have adverse environmental effects.

### **Development in areas liable to flooding, Drainage Schemes**

In general, development in flood plains increases the risk of flooding. Such development also impacts upon essential components of the aquatic ecosystem. Flood alleviation and drainage works have the potential to destroy fisheries habitats and impact upon biodiversity.

### **Greenfield Residential Development**

Residential development can have far ranging environmental impacts, such as the use of land which is a non-renewable resource. Where significant residential development occurs in locations un-served by public transport and far from an employment centre, a number of factors can be impacted upon such as human health, air quality and ultimately, climate. This is due to greenhouse gas generation as a result of over-reliance on the private car extended commuting which also causes lower quality of life and community breakdown.

Habitat destruction through the removal of trees and hedgerows, drainage of wetlands, building on floodplains, culverting of watercourses, etc. are also associated with residential development on greenfield sites. Alterations to surface water drainage dynamics and the pollution potential of run off from urban areas can have significant environmental effects.

### **Recreation uses and tourism development**

The use of jet-skis on Westmeath's lakes have resulted in pressure in terms of water pollution, noise disturbance and deterioration of amenity for other lake users. They can be considered as safety and human health issues. Since the adoption of Bye-Laws; 'Prohibition of the Use of Personal Water Craft (Jet Skis) Bye Laws' by the Council in 2006, jet-skis are now banned on the following lakes: Lough Owel, Lough Ennell, Lough Lene, Lough Sheelin (part within Administrative Area of Westmeath County Council), Lough Sewdy and Lough Derravarragh. The ban doesn't apply to Lough Ree, which has raised concern that this may result in increased pressure on this lake. Jet skis and other personal watercraft such as power boats can have significant effects on aquatic flora and fauna, water quality and fish stocks as well as on human health as a result of noise disturbance.

Tourism related development, especially unsuitable or insensitive development, may impact upon water quality, landscape and the value of the tourism product itself.

#### **4.3.2 Environmentally Vulnerable areas or factors, likely to be significantly affected**

Areas/environmental factors likely to be significantly affected are those that are considered vulnerable or sensitive due to their heritage value, significance or vulnerability to pollution or damage. These areas have all been highlighted in the above section 4.2 following detailed descriptions of the characteristics of the existing 'state of the environment'. The determination of these areas was also informed through consultation carried out as described in Section 3.1, part 3.

These areas/factors are as follows:

- Sensitive Landscapes
- Air quality and climate, due to the increase in the use of the private car and increased traffic congestion, impacting on human health
- Human health in terms of longer commuting times affecting quality of life, as a result of inadequate land use and transportation planning
- Amenity of residents due to noise and air pollution from certain forms of development, impacting on human health
- Water quality as discussed above in section 4.2.3 (implementation of the Water Framework Directive, Nitrates Directive Groundwater Protection Scheme when available and bye-laws for agriculture and septic tanks if adopted will control and prevent impacts on water quality); groundwater quality in extremely or highly vulnerable areas, source protection areas, Lake and river water bodies classed by River Basin District Projects as 'at risk' from sources of pollution
- Habitats and species and other features of natural heritage or biodiversity value in areas without EU designations or other environmental designations
- Habitats such as the Shannon Callows that are sensitive to impacts upstream such as flood plain development or drainage schemes
- Features of geodiversity value, ie – esker ridges of value that hold reserves of gravel, including those containing existing quarries or extractive industries
- Intact peatlands are under pressure from peat harvesting industry, drainage wind energy development and other development
- Hedgerows will suffer damage or removal as a result of development of all types, particularly large scale greenfield development
- Areas of unidentified archaeological potential
- Architectural character and townscapes character that are unprotected may be affected by rapid urban growth.

The environmental characteristics of these areas has been described above in Section 4.2 under the related headings.

#### **4.3.3 Existing Environmental Issues Relevant to County Westmeath and the County Development Plan**

##### **Water Pollution**

As a result of scoping, consultation and desk-top research, it seems that the biggest environmental concern for Westmeath is surface and ground water pollution. The current status of surface and groundwater quality has been described above in section 4.2.3. Pressures on water quality are predominantly due to agricultural activity, development in areas where groundwater is vulnerable, too many or poorly sited and maintained septic tank systems and industrial development causing pollution.

Lough Owel is the main public water supply for the County and as such is considered vulnerable. Westmeath County Council are also obliged to supply water to the canal from this source. Lough Ennell has been vulnerable due to wastewater capacity issues. Lough Lene is in good condition and due to its importance as a water supply source and a bathing water it is considered important to maintain its quality. Lough Ree is significantly at risk of pollution as is Lough Sheelin and Lough Derraghvarragh.

River channels in the Boyne Catchment are salmonoid and as such their quality needs to be preserved. The River Brosna has been identified as one that is at risk of deterioration, along with parts of the river Inny, the Yellow River, Dungolman and the Shannon.

Water supply infrastructure and its capacity and condition is an issue; it is estimated that currently there is a 40% level of water leakage. This issue is being addressed through checking for leaks and the replacement of infrastructure.

Wastewater infrastructure and its capacity is also an issue that is impacting on water quality. This problem will be exacerbated if strategic settlement planning does not reflect capacity issues. Capacity problems exist due to storm water runoff into the town systems. There is a need to upgrade drainage systems in some areas and this issue is being addressed through projects described above in section 4.2.3. Small-scale settlement policies will result in pressures on the provision of wastewater services. Growth of Mullingar is required by national policy but the issue of wastewater treatment capacity to support this growth must be addressed on an ongoing basis.

Groundwater is an important resource, for drinking water and also due to the fact that it feeds a significant portion of surface water bodies so its quality affects that of surface water bodies. Areas where groundwater is extremely or highly vulnerable have been highlighted.

A number of measures are in place to prevent and control pollution of ground waters, such as agricultural bye-laws, and enforcement under the Water Pollution Act. Measures will be strengthened and increased with the adoption of River Basin District Management Plans under the Water Framework Directive in 2009.

The use of jet-skis have resulted in pressure in terms of water pollution, impact on fish life, noise disturbance etc. and although bye-laws have been adopted, they do not apply to Lough Ree, potentially placing increased pressure on this lake that is already at risk from pollution sources.

Fish habitats and species are an issue that have been raised through scoping and consultation. The main channel of the River Boyne and its tributaries including the Riverstown, Deel, Milltownpass, Stonyford, Kinnegad, etc. and Loughs Lene, Adeel, Bane and White can all be considered salmonoid and it is recommended by the Fisheries Board that they be afforded the maximum protection possible in this regard. Lough Sheelin and Lough Ennell are amongst the twelve lakes in Western Europe capable of supporting stocks of large brown trout. Loughs Owel, and Derraghvarragh also support stocks of coarse fish.

### **Protection of Habitats, Biodiversity, Flora and Fauna**

A range of sensitive habitats as discussed above and areas important for their biodiversity value will come under threat from development. This threat may come either directly through forms of development that may damage or remove them, such as the removal of hedgerows or tourism related development or indirectly through developments affecting flood plains further downstream for example. Zoning of greenfield land or amenity areas for development may result in a loss of biodiversity. Development on riverbanks or riparian zones will impact upon fish life and habitats as mentioned above. Development at specific locations will affect particular species, for example at Big Meadow, Athlone, the Corncrake and its habitat must be considered.

Zebra mussels, which are one of the biggest invasive pests in the world's freshwaters, which can affect the ecology of waters and damage infrastructure, have been recorded outside

connected waterways in Lough Derravaragh<sup>∞</sup>. They are also reported to be present in other lakes, one of which is Lough Sheelin.

Eskers are an important resource for their geodiversity and biodiversity value as discussed in detail above. While some esker ridges have been afforded protection in the form of European designations, others that are of importance have not and these come under pressure for development. The extractive industries in particular pose a threat and some such activities have already been permitted in esker ridges.

### **Landscape Impact**

Westmeath has a variety of landscapes, which are important and valued in terms of county identity, tourism and the amenity of all who visit and live in the county. Some landscape types in the County may be particularly sensitive to development, as can be seen from the landscape character assessment in the Development Plan.

### **Walking routes and amenity**

The relatively unspoilt natural environment in the County and facilities such as walking and cycling routes impact positively on human health as access to the countryside and recreation and amenity is opened up.

### **Waste Management**

Midlands Waste Management policy now prioritises reducing, reusing and recycling waste over disposal to landfill and incentives have been introduced to encourage this. However such policies may have had the effect of increasing illegal dumping and fly-tipping in the country.

### **Tourism-related Development**

Tourism related development and the promotion and facilitation of tourism may have significant impacts on a range of environmental factors, such as deterioration of water quality, flood risk, removal of habitats and damage to biodiversity, flora and fauna, damage to sensitive landscapes and sensitive environments. The effect on the population of the area should also be considered since such development is often attracted to rural locations and may impact on existing communities. Bord Fáilte considers Westmeath's lakes to be 'primary products' when in pristine condition and while tourism related development is in demand, a balance must be reached between maximising tourism potential and ensuring that such resources remain valuable (unspoilt, unpolluted etc).

### **Private car usage, increased commuting times and increased traffic congestion**

Air quality, climate and human health will be affected by increased dependence on the private car and traffic congestion. The continued lack of adequate public transport facilities will exacerbate this problem. An appropriate settlement strategy, traffic management plans and the provision of improved public transport services will help to decrease these impacts.

### **Flood Risk**

Flood risk issues are particularly relevant to Athlone from the AI River and Shannon, and other areas throughout the County as highlighted in the attached 'flood risk' map. Flood risk will be affected by zoning of lands in flood risk areas and floodplains, and flooding will impact on many environmental factors, including biodiversity, flora and fauna, human health, material assets and water quality. Zoning in particular must be assessed in terms of the potential to increase flood risk.

### **Other Issues**

The scale and extent of each type of development has a bearing on the significance of an environmental impact of any given development. Developments, which individually would not have a significant effect, can have a cumulative effect, as is the case with rural housing. The

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<sup>∞</sup> Waterways Ireland - <http://iwn.iwai.ie/v30i4/waterwaynews.PDF>



visual character of a rural area can be altered considerably and permanently through a proliferation of poorly designed and sited single rural housing and ground water can be permanently polluted by a proliferation of inadequate wastewater treatment systems.

Forestry is presently not a big issue for Westmeath and only exists in small pockets around the County. However, it may emerge as a bigger issue in years to come due to decline in agriculture, EU policy etc.

Zoning for industrial development in the County Development Plan 2002-2008 is for light industrial / technological and does not allow for more intensive industries such as car scrappage, mushroom composting. Any new objectives to accommodate more than just light industrial activities will raise environmental impacts in terms of noise pollution, water and air pollution, if not suitably sited or controlled.

#### **4.3.4 Conclusion – Significant Environmental Issues**

In summary, environmental pressures on the County relate to surface water quality and ground water quality and impacts of agriculture, industry, on-site wastewater treatment systems and public wastewater treatment, capacity of wastewater treatment provision for increasing development; landscape impacts from development; tourism related development and tourist activity; biodiversity and habitat protection; flood risk, increased use of the private car and maybe forestry in the future. The settlement strategy is a particularly important policy decision in terms of environmental effects; in particular in relation to generating car journeys; where the settlement strategy contributes to an increase in car trips e.g. by facilitating rural one-off housing and thereby generating trips to work, school, services etc., the settlement strategy can have adverse environmental effects.

#### **4.3.5 Consideration of Alternative Development Plan Policy Directions**

It is required in the legislation that the Environmental Report must consider “reasonable alternatives taking into account the objectives and the geographical scope of the plan or programme” and the significant environmental effects of the alternatives selected. Section 3.14 of the DoEHLG SEA Guidelines indicate that certain strategic issues in County Development Plans may have already been determined at national or regional level. Furthermore, lower tier plans such as Local Area Plans, will be framed in a policy context set by levels above them (such as National Spatial Strategy, Regional Planning Guidelines and by the County Development Plan itself). The preparation of Development Plans must demonstrate consistency with national and regional policy and guidelines. As a result, alternative strategic options available for consideration in the preparation of the County Development Plan were quite limited.

Alternative strategies that were considered are outlined below. These were mainly based around the settlement strategy and strategic direction. The ‘Do-Nothing Scenario’, which is that which would occur in the event of non-implementation of the new plan 2008-2014 and the continuation with the last plan 2002-2008 is outlined in terms of environmental implications at the end of each of the above sections describing the environmental baseline.

##### **Alternative strategy option 1**

- Relaxed policies for rural housing, particularly in Clár areas resulting in pressure for one-off housing in rural area areas including those with extreme groundwater vulnerability and sensitive landscape. Ribbon development occurring, resulting in unsustainable transport patterns. Unsustainable rural development resulting in negative impacts to water quality, landscape and visual amenity. A deterioration of valuable ‘tourism products’, such as the lakes and landscapes would occur, resulting in declining value of the county as a tourist attraction
- Settlement strategy allowing only for higher levels of growth and service provision in principle towns in tier 1 (ie Mullingar, Athlone) and in tier 2. All other ‘priority settlements’ considered as having equal growth potential. The impact of this simplified settlement strategy would be that towns without adequate supporting infrastructure, eg Rochfortbridge, Ballymore etc would be allowed to grow as much as Kilbeggan for example or Delvin as much

as Castlepollard. Roles of settlements would not be complimentary and critical mass would not be attracted into any one centre to support district level services and facilities.

- Failure to consider impact of major infrastructural development such as the N6 and new development pressures in towns such as Rochfortbrige, Milltownpass, Kilbeggan.

### **Alternative strategy option 2**

- Avoidance of all development in or close to sensitive areas and landscapes, highly restrictive attitude to one off rural housing
- Channel all growth and development into existing urban areas without established settlement hierarchy and provision for employment centres to serve residential development appropriately. Unsustainable transport patterns encouraged as a result
- Lack of provision for rapid growth in the County – towns coming under immense pressure for rapid housing development without comprehensive masterplanning of new residential areas - housing needs being met through low density suburban type residential development
- No provision for rural development of any kind, resulting in rural population decline and breakdown of rural communities. Lack of strategy to address the decline in agriculture with rural diversification. Failure to realise potential of tourism.

### **Alternative strategy option 3**

- Restrictive attitude to rural housing in vulnerable areas but facilitation of housing subject to good siting and design principles, where local need exists, to encourage the strengthening of rural communities
- Provide for rapid increase in growth levels through additional zoning, resulting in an oversupply of zoned land for development. This would mean the expansion of town boundaries of Athlone, Mullingar, Moate, Kilbeggan and Castlepollard. A situation whereby priorities for development are unclear and piecemeal or disorderly development would arise and existing infrastructure would not be used in a sustainable manner. Insufficient wastewater treatment capacity would be provided for to deal with rapid pace of development in Mullingar and Moate, which would result in a continued deterioration of water quality in Lough Ennell and the River Brosna
- Lack of strategy for North Westmeath, resulting in disadvantage in terms of employment and services in this area as well as village decline and deterioration. Unsustainable transport patterns would be encouraged due to lack of employment and services in this part of the county, coupled with a lack of public transport facilities.

### **Preferred Option**

The three alternative strategies as outlined above were considered in light of the significant environmental issues for the County as concluded in previous sections of this Environmental Report. As a result of these considerations, a 'preferred strategy' was determined which incorporates a combination of features from the alternative strategies and also best practice and good planning principles. The main features of the 'preferred option' are as follows:

- Provide for existing level of growth plus any increase projected, through a review of zoning and projected future need provided for. The provision for physical and social infrastructure in accordance with projections and provision for phasing to ensure service provision in line with development.
- Settlement hierarchy that reflects the need for centres with different roles and development potential. Employment and major service centres on first tier, towns with capacity for growth and services, centres for some growth and limited services and employment, and centres with limited growth potential identified.

- Consolidate existing settlements by improving urban environments, encouraging brownfield and infill development and strengthening physical and social infrastructure.
- Support the role of the Midlands Linked Gateways as regionally important employment, retail and service centres through enhancing infrastructure in Athlone and Mullingar and linkages between them. Channelling new development into these towns focusing on key infrastructure nodes and maximising the use of serviced land at key locations.
- Protect valued rural environments while strengthening the rural economy through supporting its diversification and strengthening rural communities in a sustainable and strategy-led manner.
- Comprehensive strategy prepared for North Westmeath to be implemented to strengthen this region and provide for sustainable development within the overall settlement strategy.
- Realisation of the potential of tourism, through providing for tourism related development in a sustainable manner while protecting the tourism product.
- Encourage a mix of landuses where appropriate through landuse zoning and support for sustainable transport modes to reduce unsustainable forms of travel.
- Use of a Landscape Character Assessment to inform policies for development such as rural housing, wind energy and other development.

## **5 ENVIRONMENTAL PROTECTION OBJECTIVES RELEVANT TO PLAN**

### **5.1 INTRODUCTION**

The use of environmental protection objectives fulfils obligations set out in Section F, Schedule 2B of the Planning and Development (Strategic Environmental Assessment) Regulations 2004. The environmental protection objectives are distinct from the County Development Plan objectives and provide a standard against which the goals, policies and objectives of the County Development Plan can be measured in order to highlight those with the potential for environmental impact. They are used as a tool to cross check the policies of the Plan in order to maximise the environmental sustainability of the Plan. The cross checking process will help identify policies that will be likely to result in significant adverse impacts, so that alternatives may be considered or mitigation measures may be put in place.

The environmental protection objectives for the Westmeath County Development Plan have been generated from European, National and Regional Policy and Guidance. Sample objectives are given in Table 4B of the SEA Guidelines produced by the DoEHLG in 2004 and these were amended to reflect the specific issues that are considered relevant to this particular Plan and the range of issues that are significant within the County. The scoping and public consultation processes informed the generation of appropriate objectives. The objectives are set out below, under a range of headings, which were taken from the SEA Regulations and the DoEHLG guidelines.

### **5.2 ENVIRONMENTAL PROTECTION OBJECTIVES**

#### **5.2.1 Biodiversity, Flora and Fauna**

- B1: Conserve and promote the diversity of habitats and species
- B2: Protect, conserve and enhance habitats, species and areas of national or international importance, including aquatic habitats and species and promote the sustainable management of habitat networks

#### **5.2.2 Population and Human Health**

- P1: Facilitate a high quality of life for Westmeath's population through ensuring high quality residential, recreational and working environments, encouraging sustainable transport patterns and minimising noise pollution

#### **5.2.3 Water Resources**

- W1: Promote water conservation and sustainable water use based on long-term projections of available water resources.
- W2: Protect the quality of surface and ground waters as sources of drinking water and as valuable assets for amenity and recreation.
- W3: Achieve and maintain required water quality standards and reduce discharges of pollutants or contaminants to waters.

#### **5.2.4 Soil and Material Assets**

- S1: Maximise the use of brownfield lands and the existing built environment to reduce the need to develop greenfield lands.
- S2: Promote the principles of 'reduce, reuse, recycle' to minimise the amount of waste to landfill.
- S3: Maintain the quality of and access to assets such as aquifers, aggregates, motorways, open spaces, water courses and all other physical and social infrastructure.
- S4: Avoid flood risk in selecting sites for development and mitigate the effects of floods.

### **5.2.5 Cultural Heritage and Landscape**

- C1: Protect and conserve the integrity and setting of features of architectural and archaeological heritage and identify other features of merit for protection where appropriate.
- C2: Conserve and enhance valued natural and historic landscape features.
- C3: Enhance landscape and townscape quality and minimise negative visual impacts from development.
- C4: Protect and enhance the quality, character and features of waterways.
- C5: Protect and conserve the quality, character and distinctiveness of geological and geomorphological systems, sites and features.

### **5.2.6 Air and Climatic Factors**

- A1: Reduce the need to travel by private car.
- A2: Minimise emission of greenhouse gases to contribute to a reduction and avoidance of human induced global climate change.
- A3: Encourage energy efficiency in building design and maximise the use of renewable energy forms.
- A4: Reduce all forms of air pollution and promote tree planting where appropriate.

## **5.3 USE OF ENVIRONMENTAL PROTECTION OBJECTIVES**

The above Environmental Protection Objectives have been used to carry out the SEA in accordance with the legislation. They provide a standard against which the policies of the Development Plan were measured for their environmental sustainability. A crosschecking process has been used whereby the Plan policies were proofed against the Environmental Protection Objectives so that any policies with the potential for significant adverse environmental impacts were highlighted in addition to significant positive impacts. Alternative strategic options were considered or mitigation measures proposed to counteract any adverse environmental effects highlighted, thereby maximising the environmental sustainability of the Development Plan that has been produced.

## 6 STRATEGIC ENVIRONMENTAL ASSESSMENT OF POLICIES

### 6.1 METHODOLOGY FOR ASSESSMENT AND DETERMINATION OF SIGNIFICANCE OF EFFECTS

Matrices are the mechanism by which conflicts or potential conflicts between the policies of the County Development Plan and the strategic environmental objectives have been identified. These matrices are provided in Appendix One to this Environmental Report. The likely significant effects that the policies contained in the Plan will have on the environment were identified in this process.

The DoEHLG SEA Guidelines (Nov 2004) suggest that the assessment of likely significant effects on the environment should be carried out by the Development Plan team as a whole, preferably involving some external specialist advice. It was considered that external advice would be best provided through the expertise available from within the Council, Environmental Authorities and Prescribed Bodies. In order to determine the significance of impacts in the assessment of Development Plan strategic objectives and policies, a workshop format was considered optimum, involving the cross-departmental SEA Steering Group and planning staff.

The following stages were followed to ensure a robust and defensible determination of significance, particularly in difficult cases such as cumulative effect of single houses, or increased wastewater generation of particular settlements.

- Consultation with the public and relevant authorities and gathering of baseline data was carried out to determine the significant issues facing the County and the conclusions reached were presented to the Steering Group and the EPA and approved
- A set of Strategic Environmental Objectives were prepared within the Forward Planning Section, which are in accordance with National and international policy and guidance and also reflective of the significant issues facing Westmeath. These were then presented to the internal cross-departmental SEA Steering Group and the elected Members for agreement. (The environmental objectives are the standard against which the policy of the Plan will be measured)
- Each strategic objective and group of policies proposed for inclusion in the Plan were assessed against the agreed SEA objectives. This was carried out during the preparation of the Plan and changes were made as issues arose to make the Plan produced more environmentally sustainable.
- The Plan produced was formally assessed using the matrix (see Appendix One). The assessment of each was assigned a symbol;
  - o compatible (+),
  - o conflicting (-),
  - o no relationship or insignificant impact (/),
  - o possibly compatible or conflicting (?)
- Where the significance of the impact is uncertain or conflicting, the issue was raised for discussion and agreement with the Steering Group. All other issues were also raised for agreement with the Steering Group to ensure that significant issues were not missed or given undue consideration
- Evaluation of significance requires consideration of various questions, which will establish the importance, or "significance", of the predicted impact:
  1. Will the measure in the policy lead to a risk of environmental standards being breached?
  2. Could it lead to failure to achieve environmental policies or targets?
  3. Will it affect environmental resources, which are protected by laws or policies, e.g. Natura 2000 habitats, species, landscapes, water resources, agricultural resources and cultural sites, etc.?

4. Could it lead to impacts on environmental resources, which, although not legally protected, are important or valuable?

As a follow on from the preparation and evaluation of the previous sections of the report, ie baseline data and trends, existing significant issues, types and scale of development likely to impact on the environment, environmental vulnerabilities, the above questions were considered in determining significance of environmental effects identified

- Where the strategic objective or policy included in the draft plan emanates from a higher level or parallel plan. Where the nature of the impact depends on decisions that have been made or will be made at;
  - a higher policy level the symbol ↑ was used (e.g. NSS, RPG, NDP, etc.)
  - a lower policy level the symbol ↓ was used (e.g. LAP, AAP, etc.)
  - parallel policy from other plans, the symbol → will be used. (e.g. Rural Water Programme, Waste Management Plan, County Development Board Strategy, etc.)

It was not necessary to assess the impact of such objectives and policies on the environment at Development Plan SEA level.

- A set of assessment matrices for the overall settlement strategy initially and then for the range of policies to be included in the Plan were presented to the internal working group for consideration. Agreement was reached in the determination of environmental significance for all cases.
- Suggested alternatives, mitigation, offsetting, etc to the potential identified significant effects were raised for discussion, with the Steering Group and amendment to the Plan were suggested where required.

This approach was used at each stage that new policy or changes to the Draft were proposed; from presentation of the Draft Plan to the Elected Members - to the final amendments prior to final adoption of the Plan.

## **6.2 SUMMARY OF LIKELY SIGNIFICANT EFFECTS OF IMPLEMENTING THE PLAN ON THE ENVIRONMENT AND MEASURES PROPOSED TO PREVENT, REDUCE OR OFFSET**

### **6.2.1 Introduction**

The full matrix and assessment of policies against environmental objectives is included in Appendix One of this report. A summary of the outcome of this assessment is provided in this section.

Since the SEA process was intended to inform policy as it is created, the Plan policies were formulated in accordance with the findings of the SEA process and as a result they are for most part already environmentally sustainable.

In accordance with the legislation, the likely significant effects on the environment of implementing the Plan are summarised as follows under headings that include all of the issues required to be covered. Potential significant positive environmental effects have been highlighted as well as potential significant negative impacts and full details of these impacts can be seen in the matrix in Appendix One. The interrelationship between factors is given under the relevant sections.

Depending on the level of significance, which was determined based on the scale and cumulative nature of the potential impact, measures to offset or mitigate against significant negative environmental effects have been provided. Some of the potential effects discussed below are likely to be less significant than others. For those with a higher level of significance, a recommendation has been made to remove or alter the policy so as to prevent or reduce the impact if possible.

## **6.2.2 Biodiversity, Flora, Fauna**

### **Service Areas for N6**

Policy 'to co-operate with the National Roads Authority to identify the need for service areas for motorists along the route of the N6 dual carriageway and to implement proposals for provision'. Depending on the location of the service areas this could result in a significant impact to biodiversity, flora and fauna and potentially to habitats and species, such as intact bog to the east of Athlone, hedgerows and other habitats.

To offset this potentially significant impact, a policy has been included in the Plan to ensure that any such development should not damage habitats or species of value and should be developed with minimal impact to biodiversity, flora and fauna. Major infrastructural and motorway-related developments should reflect the local biodiversity value within which they are sited, using screening and planting with native species of local provenance and design should respect the landscape character.

### **Rural enterprise and agricultural development**

The policy to "sustain rural farming communities in accordance with tailored rural housing policies and policies that promote and facilitate rural enterprise", depending on the nature and scale of development may impact upon landscape and possibly will result in the removal of habitats and impacts to biodiversity, flora and fauna. Impacts to biodiversity, flora and fauna through objectives to resist the loss of hedgerows and to promote planting with species of local provenance.

### **Mullingar Town Plan**

Rapid large-scale population growth in Mullingar will require the development of previously undeveloped greenfield lands that are zoned, resulting in a loss of biodiversity to a certain extent due to the removal of habitats. Large areas that will be subject to new development in Mullingar will be subject to Local Area Plans, which will include objectives for amenity, tree planting and protection of natural features. In this regard, this issue will be dealt with in greater detail through the SEA process at Local Area Plan stage.

## **6.2.3 Population and Human Health**

Impacts to population and human health may occur as a result of reduction in general amenity, inadequate service provision such as wastewater treatment and public transport and a deterioration in landscape quality, cultural heritage, water or air quality. In this regard, issues relating to population and human health are dealt with throughout the section.

### **Scale of Population Growth**

An influx of large numbers of new residents to Mullingar town and other towns and villages will affect communities and, if not coupled with a comprehensive strategy to provide for adequate amenity, community facilities and employment opportunities, new residents will have to travel elsewhere for work or leisure, increasing unsustainable transport patterns. This will be dealt with through Local Area Plans for new development areas in Mullingar and through village plans, which will ensure that development is phased to ensure that services are provided in line with development through policies and objectives to provide and improve services.

Townscape quality and amenity could also be affected due to the scale of development proposed in Mullingar, Moate and other settlements and policies and objectives are included in the Plan to offset such potential impacts through traffic management, standard of urban design, environmental improvement schemes, open space and green linkages and protection of our built and natural heritage.



#### **6.2.4 Water Resources**

##### **Unserviced Settlement Policy**

The 'Unserviced Settlement' policy aims to direct rural residential development in a sustainable pattern, concentrating development in designated centres, to sustain rural communities and rural facilities such as schools and shops and to cater for the demand for single site housing in a rural setting.

The proposed unserviced settlements are as follows:

- Athlone Area; Baylin, Castledaly, Toberclaive, Ballynahown,
- Coole Area; Streete, Crookedwood, Drumcree, Castletown-Finnea, Lismacaffrey, Archerstown
- Kilbeggan Area; Loughnavalley, Dysart, Moyvore, Mount Temple, Tang, Horseleap, Streamstown
- Mullingar Area; the Downs, Rathconrath, Taghman, Gainstown, Ballinea and Milltown

Interim data in relation to the vulnerability of groundwater to pollution in the county has recently become available from the Geological Survey of Ireland as part of their preparation of a Groundwater Protection Scheme for the County. This information shows areas in the county that are classed as 'extremely' or 'highly' vulnerable to groundwater pollution. Some of the proposed unserviced settlements are located within these vulnerable areas.

Since the issues raised are considered potentially highly significant and cumulative, long term, permanent, negative impacts are likely, based on most recent information available; it was not possible to propose realistic mitigation measures. More appropriately, the SEA process recommends that the following settlements be removed from the unserviced settlement policy in the CDP:

- Settlements located in areas of 'extreme' groundwater vulnerability: Crookedwood, Taghmon, Tang, Loughnavalley and Mount Temple
- Settlements located in areas of 'high' groundwater vulnerability: Castletown-Finnea, Horseleap, Streamstown, and Baylin.

The reason for this recommendation is that locating a number of new houses in a vulnerable area for groundwaters, without water and wastewater treatment services and using on-site wastewater treatment systems instead, will have a cumulative effect of a significantly increased risk of groundwater pollution and potential impacts to public health as a result.

The full unserviced settlement policy should be subject to a complete review when final conclusive data is released from the GSI as part of preparation of a complete Groundwater Protection Scheme for the county. The River Basin District Management Plans to be produced by 2009 under the Water Framework Directive 2000 may also require a review of the unserviced settlement policy.

##### **Rural Housing Policy and Water**

See 'Rural Housing Policy' in Section 6.2.7

##### **Mullingar Wastewater Treatment Capacity**

The large scale population growth and development proposed for Mullingar town will place pressure on existing infrastructure and existing wastewater treatment will not be sufficient to deal with this growth. It has been identified that this requires review of existing foul and surface water drainage system to include review of capacity and condition of network, storm overflows, assessment of future development areas, capacity of the river Brosna, the capacity of the waste water treatment plant and pumping stations and the effect of phosphate loading on Lough Ennell. Mullingar Sewerage Improvement Scheme is planned, with funding allocated under the Water Services Investment Program 2005 – 2007, which will offset the

issue of capacity and condition of existing system and prevent future impacts of water pollution and phosphate loading to Lough Ennell and the River Brosna.

#### **Rural Enterprise and agricultural development**

Rural enterprise and agriculture, may result in an increased risk of water pollution depending on the nature, scale and intensity of development. Such impacts may be offset by policies for the implementation of agricultural bye-laws, Water Framework Directive, Nitrates Directive, Septic Tank Bye-laws if adopted, compliance with Cross-compliance Regulations and Use of Sludge Regulations.

#### **Wastewater Treatment Capacity to support development provided for by the Settlement Strategy**

Growth of these towns is not currently supported by adequate wastewater treatment; however objectives are contained in the Plan to upgrade wastewater treatment capacity at Kilbeggan, Kinnegad, Moate and Coole/Castlepollard

Limited wastewater treatment capacity may increase risks to water quality in other areas identified as growth centres in the Settlement Strategy. Objectives are included in the Draft Plan, which will offset this risk; to upgrade wastewater treatment capacity at Rochfortbridge, Clonmellon, Tyrellspass, Delvin, Collinstown, Ballymore, Multyfarnham, Milltownpass, Coole and Glasson. Future proposals for increasing wastewater treatment capacity are also included as objectives for Killucan, Raharney and Ballynacarrigy.

#### **6.2.5 Soil and Material Assets**

##### **Flood risk due to increased surface water run-off in Moate**

Increased development of Moate will increase surface water runoff and flood risk, however an objective is contained in the Plan to implement a flood relief scheme in Moate.

##### **Service and Rest Areas for N6**

Development of service areas at out-of-town centre locations will require that greenfield lands be developed and will impact on the viability of nearby urban centres. However, this issue will be determined at national level through the NRA and therefore cannot be assessed at County Development Plan level.

#### **Extractive Industry and Esker Systems**

The policy "to ensure adequate supplies of aggregate resources to meet the future growth needs of the County and to facilitate the exploitation of such resources where there is a proven need for a certain mineral/aggregate" if included without the previous policy; "to protect areas of geological or geomorphological interest, high landscape or amenity value, areas of importance for biodiversity, flora or fauna, surface water and groundwater resources and important aquifers, important archaeological features from inappropriate development", would place pressure on valuable eskers to be exploited for their aggregate potential. Therefore, the potentially significant negative impacts of implementing this policy are offset by the previous policy.

#### **6.2.6 Cultural Heritage and Landscape**

##### **Rural enterprise, agriculture and rural development in general**

The policy to "sustain rural farming communities in accordance with tailored rural housing policies and policies that promote and facilitate rural enterprise", depending on the nature, scale, siting and design of development may impact upon landscape character. Impacts to landscape may be offset through policies contained in the Landscape Character Assessment, Rural Design Guidelines and policies for general landscape protection, siting of development and screening and planting as contained in the Plan.

## **Wind Energy Development**

Wind energy developments, if unsuitably sited in sensitive areas for biodiversity or landscape or close to housing could result in significant negative impacts. This issue is addressed through the identification of areas suitable and unsuitable for wind energy development as informed through the Landscape Character Assessment and policies for such development address the sensitivity of areas, siting etc. Applications for wind energy development will be dealt with on a case by case basis through the development management process, using development management standards set out in the Plan. The potential for significant environmental impacts from larger scale developments will be dealt with through EIA at planning application stage.

## **Rural Housing Policy and Landscape**

See 'Rural Housing Policy' in Section 6.2.7

### **6.2.7 Air and Climate Factors**

#### **Zoning of excess land for residential use in Delvin and Clonmellon**

- Existing zoning in Delvin allows for a provision of an additional population of 2431 people, potentially bringing the population of this village to in excess of 2789 + people by 2014 if all this land were to be developed within the period of the plan.
- Existing zoning in Clonmellon allows for a provision of an additional population of 919 people, potentially bringing the population to in excess of 1610 + people by 2014.

Provision for this scale of population growth in such a short space of time without employment and public transport would potentially have a wide range of significant environmental effects, depending on the scale of development, such as negative impacts to air quality through increasing the need to travel by private car, population and human health by encouraging unsustainable transport patterns, impacts on townscape quality with rapid change to landscape and biodiversity and with rapid development of greenfield lands. This reflects the situation in the existing Local Area Plans for these settlements as no new zonings have been proposed.

The relevant Strategic Environmental Objectives that the excessive zoning conflicts with are P1; 'to facilitate a high quality of life for Westmeath's population through ensuring high quality residential, recreational and working environments, encouraging sustainable transport patterns and minimising noise pollution', C3; 'to enhance the landscape and townscape quality and minimise negative visual impacts from development' and A1; 'to reduce the need to travel by private car'.

Since the issues raised are considered potentially highly significant and cumulative, long term, permanent, negative impacts could occur, it was not possible to propose realistic mitigation measures. More appropriately, the SEA process recommends that excess residentially zoned land in Delvin and Clonmellon should be de-zoned in the County Development Plan 2008-2014, to ensure the logical and sustainable development of these areas.

#### **Rural Development and reliance on the private car**

Settlement strategy Tiers 3 and 4 in particular will allow for population growth in areas with a limited employment base and minimal provision for public transport use. This will increase the need to travel by private car, conflicting with Strategic Environmental Objective A1.

In addition, policies to support rural enterprise and rural-based tourism industries will result in an increased need to travel to such areas without the option of sustainable modes of transport.

An objective has been included in the Plan to explore options to increase provision for public transport services in rural areas and to support developments of the rural bus initiative and any other sustainable transport initiatives.

The policy to “sustain rural farming communities in accordance with tailored rural housing policies and policies that promote and facilitate rural enterprise” may actually help to reduce dependence on the private car by providing employment close to rural dwellings to a certain extent.

Policies to improve public transport service provision and sustainable land use and transportation planning policies in general are included in the Plan and will impact positively by reducing the need to travel by private car, improving access to services of people from all sectors of society and reducing air pollution.

### **Rural Housing Policy**

One-off rural housing raises a number of environmental concerns and if it is not ‘rural generated’; necessary to sustain rural communities and economies; it can be considered unsustainable. These environmental concerns include:

- a) Housing which is urban generated: where occupiers are working, at school, accessing services and meeting family and friends, etc., in urban areas and elsewhere; generates car journeys and results in unsustainable transport patterns. Such development cumulatively results in undesirable environmental impacts, including greenhouse gas emissions and use of non renewable resources, and is contrary to our obligations under the Kyoto agreement. In contrast, for rural generated housing, some of these journeys e.g. to work or family, will be within the local area.
- b) Individual rural houses that are poorly sited and screened or located in sensitive or exposed environments or landscapes will negatively impact on the quality of the area. Cumulatively a large volume of rural housing development over time, however sensitively sited will impact visually upon landscape and natural amenity.
- c) Single rural houses that rely on individual on-site wastewater treatment place surface and ground water resources under a significant risk of pollution and can be particularly harmful if located in areas of groundwater vulnerability.

The Sustainable Rural Housing Guidelines (2005) issued by the DoEHLG advises on the type of housing development that should be considered as rural generated; which should take account of the scope and extent of the housing needs to be considered in the area – whether beside a large town or more removed from such a centre; the categories of persons the guidelines cite as comprising rural generated are those who are an intrinsic part of the rural community, e.g., have lived for substantial periods of their lives in the area as members of the established rural community; or persons working full-time or part-time in the rural area e.g., in farming or natural resource related occupations or teaching in a rural school.

The Development Plan policy allows for persons in the following categories:

1. Persons who are actively engaged in agriculture, horticulture, forestry, bloodstock and peat industry.
2. Members of farm families seeking to build on the family farm.
3. Landowners and members of landowners’ families (landowner for this purpose being defined as persons who owned the land in question at the date of adoption of the draft County Development Plan 2000).
4. Persons employed locally whose employment would provide a service to the Local Community.
5. Persons who have personal, family or economic ties within the area, including returning emigrants.

Category five extends the categories beyond the Guidelines range by allowing for persons who have undefined personal, family or economic ties within the rural area. While, the Guidelines represent policy taken at a higher level and therefore are more appropriately dealt

with at that higher level, the extension of the categories of qualifying persons beyond the guidelines must be considered in this SEA.

Since the 'ties' within the rural area are undefined, this category could be loosely applied and rural housing that is not necessary to sustain rural communities and economies, and which is therefore unsustainable, may be permissible. This will exacerbate environmental impacts in relation to the effects of rural housing which are considered potentially highly significant and cumulative long term, permanent, negative impacts.

Since rural housing, however necessary to sustain the rural community or economy may still result in negative environmental implications; policies and objectives have been formulated and included in the Plan to address such potential impacts. These include those for High Amenity Areas, groundwater protection, landscape protection and the conservation of our natural heritage. Proposals for one-off rural housing will be dealt with on a case-by-case basis and policy is contained in the Plan to ensure that proposals contributing to ribbon development, those impacting on sensitive areas or environments or those likely to pose a significant threat to surface or groundwater resources will be strictly regulated. Rural Design Guidelines have been produced which will help to increase the quality of proposals so that impacts to the landscape will be minimised. An objective is included to encourage the development of sustainable rural transport initiatives with a view to reducing unsustainable transport patterns.

#### **High Amenity Area**

The High Amenity Areas for Loughs Ree, Derravaragh and Sheelin are reduced, removed, or reviewed and the buffer zone for Lough Ree removed. This result in negative impacts on the biodiversity environmental protection objectives, to conserve and promote the diversity of habitats and species and the protection, conservation and enhancement of habitats, species and areas of national or international importance.

It is noted that the extension of the Lough Ree High Amenity Area into parts of the former buffer zone will result in positive impacts on the biodiversity environmental protection objectives.

#### **Provision for sustainable transport services to serve expanding population**

Large scale population growth without corresponding employment uses in the town centre will increase the need for the Mullingar population to travel elsewhere for employment, eg Athlone and Dublin. While there is a train service to Dublin, there is currently no sustainable mode of transport to Athlone, increasing reliance on the private car. Policies are included in the Plan to offset this potential impact by supporting the re-opening of the Mullingar to Athlone rail line and other public transport improvements, developments and services.

#### **Development along National Routes**

"To restrict development accessing national routes in cooperation with the NRA" This policy restricts development with a direct access point onto a national route. This would not necessarily control development that would have an impact on the national route such as development at interchanges; permitting such development could affect the carrying capacity, safety and efficiency of the national road network and could result in backed up traffic and associated negative environmental implications of air pollution.

## **7 MONITORING**

### **7.1.1 Introduction**

As part of the Strategic Environmental Assessment process, measures envisaged for monitoring the likely significant effects of implementing the Plan must be included in the Environmental Report. The two year progress review of the implementation of the Development Plan will include monitoring of significant environmental effects.

Monitoring is often based on indicators, which measure changes in the environment, especially changes which are critical in terms of environmental quality. The Department of Environment Heritage and Local Government SEA Guidelines state that indicators that can be easily and realistically measured should be used and this has been used. "Environmental indicators are key statistics, which describe an environmental issue. Their purpose is to communicate information on environmental issues in a simplified manner and over time to create a benchmark against which future progress towards sustainable development can be measured. To be effective they should be representative of the issue and be based on scientifically valid information. In this manner they can support policy development and reflect the interrelationship between society, the economy and the environment."

Several kinds of indicators may be used to fulfil particular functions and measure the quality/quantity of environmental resources:

1. State of the environment indicators reflect environmental quality, or quantity of physical and biological or chemical phenomenon;
2. Stress indicators reflect development effects;
3. Performance indicators may be used to evaluate long-term achievements in environmental management and protection;
4. Sustainable development indicators introduce a new dimension to the provision of information, in that they seek to describe and measure key relationships between economic, social and environmental factors.

In all cases, indicators should both quantify and simplify information, thereby making it more accessible to policy-makers and the public.

Where new or improved monitoring measures come to light during the course of the Plan review they will inform monitoring for SEA, to ensure that monitoring of effects during the course of implementing the plan can be meaningful and effective.

The following measures are proposed as part of this SEA process, to monitor the effects on the environment of implementing the Plan, presented in terms of the achievement of the environmental protection objectives and the impact on the environmental factors that the SEA legislation requires to be considered.

### 7.1.2 Monitoring Proposals and Environmental Indicators

<b>Biodiversity, Flora and Fauna</b>		
Strategic Environmental Objectives	Indicators	Targets
<p>B1: Conserve and promote the diversity of habitats and species</p> <p>B2: Protect, conserve and enhance habitats, species and areas of national or international importance, including aquatic habitats and species and promote the sustainable management of habitat networks</p>	<ol style="list-style-type: none"> <li>1. Removal of Hedgerows (using baseline data from Hedgerow Survey)</li> <li>2. Harvesting of Intact Bog per hectare (using baseline data from Peatland Study)</li> <li>3. Percentage of broadleaf and native tree species planted</li> <li>4. Development within esker systems, including extractive industries (using data from Esker Study)</li> <li>5. Level of injurious developments permitted in areas of national or international importance or affecting habitats or species of importance, including fish species</li> <li>6. Designation of additional areas of national or international biodiversity, geodiversity value for protection</li> </ol>	<ol style="list-style-type: none"> <li>1. No loss of hedgerow habitats</li> <li>2. No loss of intact peatland habitats</li> <li>3. Retention of biodiversity and geodiversity value of all eskers systems of value</li> <li>4. 30% broadleaf afforestation</li> <li>5. Retention of value of areas of national and international importance and no developments permitted that would impact upon habitats or species of importance</li> <li>6. Designation of additional areas worthy of protection, such as valuable esker systems</li> </ol>

<b>Population and Human Health</b>		
Strategic Environmental Objectives	Indicators	Targets
<p>P1: Facilitate a high quality of life for Westmeath's population through ensuring high quality residential, recreational and working environments, encouraging sustainable transport patterns and minimising noise pollution</p>	<ol style="list-style-type: none"> <li>1. Notices served under Noise Regulations</li> <li>2. Commuting Trends from CSO data</li> <li>3. Environmental Improvement Schemes implemented</li> <li>4. Increased availability of public transport facilities</li> <li>5. Increase in walking and cycling to school / work using the 2006 census as a baseline.</li> <li>6. Drinking Water Quality</li> </ol>	<ol style="list-style-type: none"> <li>1. Reduced levels of incidences of noise pollution</li> <li>2. Increased provision of public transport services to as large a portion of the County's population as possible</li> <li>3. Implemented Environmental Improvement Schemes to the satisfaction of communities</li> <li>4. Reduced private car usage</li> <li>5. Improvement or at least no deterioration in levels of compliance with drinking</li> </ol>

	<p>monitoring</p> <p>7. Number of and area of public parks and walkways maintained by the Council and available and accessible for public use</p> <p>8. Quantities of public and private open space provided as part of new development</p>	<p>compliance with drinking water quality standards</p> <p>6. Increased public amenity throughout the county</p>
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Water Resources		
<p>Strategic Environmental Objectives</p> <p>W1: Promote water conservation and sustainable water use based on long term projections of available water resources</p> <p>W2: Protect the quality of surface and ground waters as sources of drinking water and as valuable assets for amenity and recreation</p> <p>W3: Achieve and maintain required water quality standards and reduce discharges of pollutants or contaminants to waters</p>	<p>Indicators</p> <ol style="list-style-type: none"> <li>1. Changes in water quality identified through water quality monitoring as a result of implementation of the Water Framework Directive, Nitrates Directive, Groundwater Directive and Groundwater Protection Scheme when implemented, Use of Sludge Regulations, Cross-Compliance Regulations</li> <li>2. Compliance with proposed Septic Tank By-Laws (for Lough Owel and Lough Lene) if implemented</li> <li>3. Changes in water quality identified as a result of monitoring under IPPC licensing or Waste Licensing</li> <li>4. Changes in water quality identified as a result of Lake Water Sampling and River Water Sampling</li> <li>5. Increased or decreased number of Blue Flag designations and compliance with the Bathing Water quality standards (EPA)</li> <li>6. Percentage of farms (expressed as a % of total farmland) participating in the Rural Environmental Protection Scheme (REPS)</li> </ol>	<p>Targets</p> <ol style="list-style-type: none"> <li>1. Improvement or at least no deterioration in surface or ground water quality</li> <li>2. Improvement or at least no deterioration in lake water quality</li> <li>3. Improvement or at least no deterioration in ground water quality</li> <li>4. Improvement or at least no deterioration in drinking water quality</li> <li>5. Retention of existing 'Blue Flag' designations and reinstatement of 'Blue Flag' designations at lakes previously designated,; Lough Ennell and Lough Lene and other designations granted</li> <li>6. Increase in the area of land managed under the scheme</li> </ol>



Soil and Material Assets		
<p>Strategic Environmental Objectives</p> <p>S1: Maximise the use of brownfield lands and the existing built environment to reduce the need to develop greenfield lands</p> <p>S2: Promote the principles of 'reduce, reuse, recycle' to minimise the amount of waste to landfill</p> <p>S3: Maintain the quality of and access to assets such as aquifers, aggregates, motorways, open spaces, watercourses and all other physical and social infrastructure</p> <p>S4: Avoid flood risk in selecting sites for development and mitigate the effects of floods</p>	<p>Indicators</p> <ol style="list-style-type: none"> <li>1. % Of new applications granted on brownfield or infill sites</li> <li>2. Tonnage of household waste collected sent to landfill</li> <li>3. Tonnage of household waste collected which is sent for recycling</li> <li>4. Instances of flooding which cause damage to property (not land).</li> </ol>	<p>Targets</p> <ol style="list-style-type: none"> <li>1. Specified percentage of new applications granted to be on brownfield lands or as infill development<sup>1</sup></li> <li>2. Reduced waste to landfill, increased waste sent for recycling</li> <li>3. No increases in flooding which causes damage to property</li> </ol>

Cultural Heritage and Landscape		
<p>Strategic Environmental Objectives</p> <p>C1: Protect and conserve the integrity and setting of features of architectural and archaeological heritage and identify other features of merit for protection where appropriate</p> <p>C2: Conserve and enhance valued natural and historic landscape features</p> <p>C3: Enhance landscape and townscape quality and minimise negative visual impacts from development</p> <p>C4: Protect and enhance the quality, character and features of waterways</p> <p>C5: Protect and conserve the quality, character and distinctiveness of geological and geomorphological systems, sites and features</p>	<p>Indicators</p> <ol style="list-style-type: none"> <li>1. Number of Structures included in the RPS or areas designated as ACAs</li> <li>2. Number of structures on the RPS or within ACAs damaged or demolished as a result of development</li> <li>3. Number of monuments or cases in areas of archaeological potential in the Record of Monuments and Places that have been recorded or subjected to physical/geophysical exploration/excavation as a result of an application for planning permission</li> <li>4. Number of monuments in the RMP or other monuments that have been damaged, including their fabric or setting, by development granted planning permission</li> </ol>	<p>Targets</p> <ol style="list-style-type: none"> <li>1. Increase or no change in the number of valued structures afforded protection</li> <li>2. No damage occurring to structures or monuments, or their character or setting, due to development</li> <li>3. Increase in exploration and excavation resulting in discoveries of archaeological potential and or new inclusions to the RMP</li> <li>4. No damage or deterioration to the quality, character and features of waterways</li> <li>5. No damage or deterioration to the quality, character or distinctiveness of geological and geomorphological systems, sites and features</li> </ol>

<sup>1</sup> A baseline survey of brownfield lands suitable for redevelopment is required in order to set a reasonable target in this regard

	<p>granted planning permission</p> <p>5. Number of archaeological objects found catalogued and retained under local authority safekeeping</p> <p>6. Number of sites or features of heritage value open to or accessible by the public with meaningful interpretation of their value and importance</p> <p>7. Amount of development impacting on identified esker systems of value</p>	
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Air and Climatic Factors		
Strategic Environmental Objectives	Indicators	Targets
<p>A1: Reduce the need to travel by private car</p> <p>A2: Minimise emission of greenhouse gases to contribute to a reduction and avoidance of human induced global climate change</p> <p>A3: Encourage energy efficiency in building design and maximise the use of renewable energy forms</p> <p>A4: Reduce all forms of air pollution and promote tree planting where appropriate</p>	<p>1. Commuting Trends from CSO data</p> <p>2. Use of public transport – numbers using rail and bus services</p> <p>3. Level of provision of and improvement to walking and cycling facilities and networks</p> <p>4. Percentage of broadleaf and native tree species planted</p> <p>5. Number and scale of wind energy and biomass developments granted planning permission</p> <p>6. Levels of sulphur dioxide, nitrogen oxides and particulate matter found as a result of periodic monitoring carried out by the EPA.</p>	<p>1. Increased provision of and use of public transport</p> <p>2. Reduced private car use/ownership</p> <p>3. Increased public rights of way and established and maintained walking and cycling routes</p> <p>4. 30% broadleaf afforestation</p> <p>5. Increased proportion of energy generated within the county from renewable energy sources – EU targets reached</p> <p>6. Maintenance of low levels or levels within EU limits of sulphur dioxide, nitrogen oxides and particulate matter</p>

# SEA Statement of Westmeath County Development Plan 2008-2014

The Planning Authority is required under section 12 of the Planning & Development Acts 2000 – 2006 and the Planning & Development (Strategic Environmental Assessment) Regulations 2004 Article 7, that a statement is produced (the SEA Statement) summarising how environmental considerations, etc., through the strategic environmental assessment of the Plan, have been integrated into the Plan making.

## **A) How environmental considerations have been integrated into the Plan**

### **Influence of the SEA Process during draft Plan Preparation**

The process has led to an increased awareness within the Forward Planning Section of the potential environmental impacts (both positive and negative) associated with stages of the Development Plan. The establishment of the Environmental Baseline in particular has resulted in a useful pool of information being created which will be valuable in carrying out environmental assessments for future plans and will be useful in identifying trends and monitoring change effectively. Since the SEA process was intended to inform policy as it is created, the Draft Plan policies were formulated in accordance with the findings of the SEA process, therefore improving the Draft Plan before it was finalised.

### **Influence of the Environmental Report**

The recommendations made in the Environmental Report that was published with the Draft County Development Plan were assessed to determine their level of significance and the majority of the issues raised were already taken into account in the Draft Plan.

A selection of key recommendations that were taken into account that directly influenced the drafting of policy in the development plan include;

- Service Areas for N6
- Settlement Strategy
- Development along National Routes
- Wastewater Treatment Capacity Issues

Three issues in particular were raised and determined to be of a significant nature through the SEA Steering Group but were not incorporated into the draft Plan;

#### **1 Zoning of excess land for residential use in Delvin and Clonmellon**

The Environmental Report on the draft County Development Plan identified an excess zoning of residential lands in Delvin & Clonmellon.

Following public consultation, it is a proposed amendment that the release of residential zoned land in four specific towns, one of which is Delvin, is managed to secure a sustainable co-ordinated growth. There is limited additional residential lands proposed in any of the other settlements.

#### **2 Unserved Settlements**

The Unserved Settlement policy or the designation of any particular settlements was not altered through the review and adoption process, it is recommended that when ground water vulnerability is determined following the completion of a Groundwater Protection Scheme for the County, the Unserved Settlement policy and identification of settlements should be reviewed to protect vulnerable ground waters from pollution.

#### **3 Rural Housing Policy**

It is a recommendation of the Environmental Report that the final category of persons satisfying policies to develop in a rural area, ie. persons who have close personal, family or

economic ties within the area, including returning emigrants is more clearly defined, to conform with the Sustainable Rural Housing Guidelines. It was a subsequent recommendation by the Manager in the proposed amendments on display that the final category of rural housing is amended to reflect the recommendation of the Sustainable Rural Housing Guidelines.

**B) How, (i) the environmental report (of February 2007), (ii) submissions and observations made to the planning authority in response to the display of the draft Development Plan and the display of proposed amendments to the development plan and (iii) any consultation with EU Member States, have been taken into account during the preparation of the plan,**

On February 24<sup>th</sup> 2007, the draft County Development Plan and the Environmental Report undertaken in accordance with SEA requirements were placed on public display. Over a period of 10 weeks, 792 submissions and observations were received on the draft Plan and the Environmental Report.

A Managers Report on all submissions and observations received was prepared and issued to Members for their consideration.

The Managers Report summarised the issues raised and made a recommendation to Members on whether the draft Plan should be amended in response to the submissions and observations received on the Plan and the Environmental Report. Submissions from the Department of the Environment, Heritage and Local Government stated that the Environmental Report gave due recognition to the benign effect which the content of the Plan will have on the environment.

Having considered the draft County Development Plan and the Managers Report on submissions received at public meetings on the 08<sup>th</sup> and 15<sup>th</sup> October 2007, Members of the County Council resolved to accept the Managers Report and proposed additional amendments to the draft Plan. The amendments were subject to subsequent environmental appraisal in accordance with the methodology established in the Environmental Report and put on public display.

Notable recommendations of the Managers Report incorporated into the proposed Amendments on display include the proposal to manage the release of residentially zoned lands in some towns, as referred to above.

**C) The reasons for choosing the Plan, as adopted, in the light of the other reasonable alternatives dealt with,**

Consideration of Alternatives

It is required in the legislation that the Environmental Report must consider "reasonable alternatives taking into account the objectives and the geographical scope of the plan or programme" and the significant environmental effects of the alternatives selected. Section 3.14 of the DEHLG SEA Guidelines indicate that certain strategic issues in County Development Plans may have already been determined at national or regional level. Furthermore, lower tier plans such as Local Area Plans, will be framed in a policy context set by levels above them (such as National Spatial Strategy, Regional Planning Guidelines and by the County Development Plan itself). The preparation of Development Plans must demonstrate consistency with national and regional policy and guidelines. As a result, alternative strategic options available for consideration in the preparation of the Draft County Development Plan were quite limited.

Alternative strategies that were considered are outlined below. These were mainly based around the settlement strategy and strategic direction. The 'Do-Nothing Scenario', which is that which would occur in the event of non-implementation of a new plan and the continuation with the existing plan is outlined in terms of environmental implications within the environmental baseline sections of the Environmental Report of the Draft Plan.

#### Alternative strategy option 1

- Relaxed policies for rural housing, particularly in Clár areas resulting in pressure for one-off housing in rural areas including those with extreme groundwater vulnerability and sensitive landscape. Ribbon development occurring, resulting in unsustainable transport patterns. Unsustainable rural development resulting in negative impacts to water quality, landscape and visual amenity. A deterioration of valuable 'tourism products', such as the lakes and landscapes would occur, resulting in declining value of the county as a tourist attraction
- Settlement strategy allowing only for higher levels of growth and service provision in principle towns in tier 1 (ie Mullingar, Athlone) and in tier 2. All other 'priority settlements' considered as having equal growth potential. The impact of this simplified settlement strategy would be that towns without adequate supporting infrastructure, eg Rochfortbridge, Ballymore etc would be allowed to grow as much as Kilbeggan for example or Delvin as much as Castlepollard. Roles of settlements would not be complementary and critical mass would not be attracted into any one centre to support district level services and facilities.
- Failure to consider impact of major infrastructural development such as the N6 and new development pressures in towns such as Rochfortbridge, Milltownpass, Kilbeggan.

#### Alternative strategy option 2

- Avoidance of all development in or close to sensitive areas and landscapes, highly restrictive attitude to one off rural housing
- Channel all growth and development into existing urban areas without established settlement hierarchy and provision for employment centres to serve residential development appropriately. Unsustainable transport patterns encouraged as a result
- Lack of provision for rapid growth in the County – towns coming under immense pressure for rapid housing development without comprehensive masterplanning of new residential areas - housing needs being met through low density suburban type residential development
- No provision for rural development of any kind, resulting in rural population decline and breakdown of rural communities. Lack of strategy to address the decline in agriculture with rural diversification. Failure to realise potential of tourism.

#### Alternative strategy option 3

- Restrictive attitude to rural housing in vulnerable areas but facilitation of housing subject to good siting and design principles, where local need exists, to encourage the strengthening of rural communities
- Provide for rapid increase in growth levels through additional zoning, resulting in an oversupply of zoned land for development. This would mean the expansion of town boundaries of Athlone, Mullingar, Moate, Kilbeggan and Castlepollard. A situation whereby priorities for development are unclear and piecemeal or disorderly development would be encouraged would arise and existing infrastructure would not be used in a sustainable manner. Insufficient wastewater treatment capacity would be provided for to deal with rapid pace of development in Mullingar and Moate, which would result in a continued deterioration of water quality in Lough Ennell and the River Brosna
- Lack of strategy for North Westmeath, resulting in disadvantage in terms of employment and services in this area as well as village decline and deterioration. Unsustainable transport patterns would be encouraged due to lack of employment and services in this part of the county, coupled with a lack of public transport facilities.

#### Preferred Option

The three alternative strategies as outlined above were considered in light of the significant environmental issues for the County as concluded in the Environmental Report. As a result of these considerations, a 'preferred strategy' was determined which incorporated a combination of features from the alternative strategies and also best practice and good planning principles. The main features of the 'preferred option' are as follows:

- Provide for existing level of growth plus any increase projected, through a review of zoning and projected future need provided for. The provision for physical and social infrastructure in accordance with projections and provision for phasing to ensure service provision in line with development
- Settlement hierarchy that reflects the need for centres with different roles and development potential. Employment and major service centres on first tier, towns with capacity for growth and services, centres for some growth and limited services and employment, and centres with limited growth potential identified.
- Consolidate existing settlements by improving urban environments, encouraging brownfield and infill development and strengthening physical and social infrastructure.
- Support the role of the Midlands Linked Gateways as regionally important employment, retail and service centres through enhancing infrastructure in Athlone and Mullingar and linkages between them. Channelling new development into these towns focusing on key infrastructure nodes and maximising the use of serviced land at key locations.
- Protect valued rural environments while strengthening the rural economy through supporting its diversification and strengthening rural communities in a sustainable and strategy-led manner.
- Comprehensive strategy prepared for North Westmeath to be implemented to strengthen this region and provide for sustainable development within the overall settlement strategy.
- Realisation of the potential of tourism, through providing for tourism related development in a sustainable manner while protecting the tourism product.
- Encourage a mix of landuses where appropriate through landuse zoning and support for sustainable transport modes to reduce unsustainable forms of travel.
- Use of a Landscape Character Assessment to inform policies for development such as rural housing, wind energy and other development.

#### **D) The measures decided upon to monitor the significant environmental effects of the implementation of the plan.**

Measures were proposed as part of this SEA process to monitor the effects on the environment of implementing the Draft Plan and these are presented in the Environmental Report in terms of the achievement of the environmental protection objectives and the impact on the environmental factors that the SEA legislation requires to be considered. Measurable indicators are included and targets are set.

Monitoring for SEA will be carried out as part of the overall monitoring of implementation of the County Development Plan, as required two years after adoption of the Plan.

# APPENDIX ONE — MATRIX

1

**APPENDIX ONE: ASSESSMENT OF COUNTY  
DEVELOPMENT PLAN POLICIES FOR  
SIGNIFICANT ENVIRONMENTAL EFFECTS**

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## **APPENDIX ONE: ASSESSMENT OF COUNTY DEVELOPMENT PLAN POLICIES FOR SIGNIFICANT ENVIRONMENTAL EFFECTS**

### **ENVIRONMENTAL PROTECTION OBJECTIVES**

#### **Biodiversity, Flora and Fauna**

- B1: Conserve and promote the diversity of habitats and species
- B2: Protect, conserve and enhance habitats, species and areas of national or international importance, including aquatic habitats and species and promote the sustainable management of habitat networks

#### **Population and Human Health**

- P1: Facilitate a high quality of life for Westmeath's population through ensuring high quality residential, recreational and working environments, encouraging sustainable transport patterns and minimising noise pollution

#### **Water Resources**

- W1: Promote water conservation and sustainable water use based on long term projections of available water resources
- W2: Protect the quality of surface and ground waters as sources of drinking water and as valuable assets for amenity and recreation
- W3: Achieve and maintain required water quality standards and reduce discharges of pollutants or contaminants to waters

#### **Soil and Material Assets**

- S1: Maximise the use of brownfield lands and the existing built environment to reduce the need to develop greenfield lands
- S2: Promote the principles of 'reduce, reuse, recycle' to minimise the amount of waste to landfill
- S3: Maintain the quality of and access to assets such as aquifers, aggregates, motorways, open spaces, watercourses and all other physical and social infrastructure



- S4: Avoid flood risk in selecting sites for development and mitigate the effects of floods

### **Cultural Heritage and Landscape**

- C1: Protect and conserve the integrity and setting of features of architectural and archaeological heritage and identify other features of merit for protection where appropriate
- C2: Conserve and enhance valued natural and historic landscape features
- C3: Enhance landscape and townscape quality and minimise negative visual impacts from development
- C4: Protect and enhance the quality, character and features of waterways
- C5: Protect and conserve the quality, character and distinctiveness of geological and geomorphological systems, sites and features

### **Air and Climatic Factors**

- A1: Reduce the need to travel by private car
- A2: Minimise emission of greenhouse gases to contribute to a reduction and avoidance of human induced global climate change
- A3: Encourage energy efficiency in building design and maximise the use of renewable energy forms
- A4: Reduce all forms of air pollution and promote tree planting where appropriate

↑	More appropriately dealt with at a higher or parallel policy level	+	Potentially Significant Positive Environmental Effect	/	No Significant Environmental Effect
↓	More appropriately dealt with at a lower policy level	-	Potentially Significant Negative Environmental Effect	?	Uncertain Impact

## Population and Settlement

Policy/Strategic Aims	B1	B2	P1	W1	W2	W3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
Achieve accelerated population growth in Mullingar and Athlone in sustainable quality urban environments based on the urban design principles scheduled in section 2.4. <sup>1</sup>	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
Concentrate population growth in the selected towns and villages to provide an economic base on which to provide services and infrastructure and with the most viable opportunity to support a public transport network reducing reliance on the private car.	+	/	+	/	+	+	+	/	+	/	/	/	+	/	/	+	+	/	/
Develop a strong supporting population and employment base in identified service towns in attractive quality urban environments	/	/	+	/	/	/	+	/	+	/	/	/	+	/	/	+	+	/	/
Consolidate the strong network of attractive villages and settlements through out the County in accordance with adopted local plans and strategies and provide attractive living and working environments for residents	/	/	+	/	/	/	+	/	+	/	/	/	+	/	/	+	/	/	/
Provide serviced sites in existing settlements demonstrating population or economic decline/stagnation as an alternative to one off rural housing	/	/	+	/	+	+	/	/	+	/	/	+	+	+	/	+	+	/	/
Promote the re-use and adaptation of existing older vacant structures in the countryside as a more sustainable alternative to one off rural housing	+	/	/	/	/	/	/	/	/	/	/	+	+	/	/	/	/	/	/
Sustain rural farming communities in accordance with tailored rural housing policies	/	/	+	/	/	?	/	/	+	/	/	/	/	/	/	+	/	/	/

<sup>1</sup> This policy is included in accordance with National and Regional policy, through the National Spatial Strategy and the Regional Planning Guidelines and it is not appropriate to deal with any potential issues at County Development Plan level.

Policy/Strategic Aims	B1	B2	P1	W1	W2	W3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
and policies that promote and facilitate rural enterprise. <sup>2</sup>																			
Deliver sustainable economic and community growth through implementation of the North Westmeath Strategy.	+	+	+	/	+	/	/	/	+	/	+	+	+	+	/	+	/	/	/
Settlement Hierarchy: Tier 1; Gateway Towns; Mullingar and Athlone	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
Settlement Hierarchy: Tier 2; Centres for Growth; Moate, Castlepollard, Kilbeggan, Kinnegad	/	/	+	/	/	- <sup>3</sup>	+	/	+	- <sup>4</sup>	/	/	/	/	/	+	+	/	/
Settlement Hierarchy: Tier 3; Centres with further development potential; Rochfortbridge, Killucan/Rathwire, Clonmellon, Tyrellspass, Delvin, Raharney, Ballynacarragy, Collinstown, Ballymore, Multyfarnham, Milltownpass, Coole and Glasson	/	/	+	/	- <sup>5</sup>	- <sup>6</sup>	+	/	+	/	/	/	/	/	/	- <sup>7</sup>	/	/	/
Settlement Hierarchy: Tier 4; Centres with limited development potential; Ballinalack, Rathowen, Finnea, Balinagore, Ballykeeran and Castletown-Geoghegan	/	/	/	/	/	/	/	/	+	/	/	/	/	/	/	- <sup>8</sup>	/	/	/

<sup>2</sup> Rural enterprise and agriculture, depending on the nature and scale of development may impact upon landscape and possibly will result in the removal of habitats and impacts to biodiversity, flora and fauna. They may also result in an increased risk of water pollution depending on the nature, scale and intensity of development. Such impacts may be offset by policies for the implementation of agricultural bye-laws, Water Framework Directive, Nitrates Directive, Septic Tank Bye-laws if adopted, compliance with Cross-compliance Regulations and Use of Sludge Regulations. Impacts to landscape may also be offset through policies contained in the Landscape Character Assessment and impacts to biodiversity, flora and fauna through objectives to resist the loss of hedgerows and to promote planting with species of local provenance. Rural employment to a certain extent may actually reduce dependence on the private car by providing employment close to rural dwellings.

<sup>3</sup> Growth of these towns is not currently supported by adequate wastewater treatment, however, objectives are contained in the Draft Plan to upgrade wastewater treatment capacity at Kilbeggan, Kinnegad, Moate and Coole/Castlepollard

<sup>4</sup> Increased development of Moate will increase surface water runoff and flood risk, however an objective is contained in the Draft Plan to implement a flood relief scheme in Moate

<sup>5</sup> See footnote number 6

<sup>6</sup> Limited wastewater treatment capacity may increase risks to water quality, however objectives are included in the Draft Plan to upgrade wastewater treatment capacity at Rochfortbridge, Clonmellon, Tyrellspass, Delvin, Collinstown, Ballymore, Multyfarnham, Milltownpass, Coole and Glasson. Future proposals for increasing wastewater treatment capacity Killucan, Raharney and Ballynacarragy

<sup>7</sup> Tier 3 centres will provide for limited employment and services and since they do not benefit from adequate public transport provision, populations of these centres will be reliant on private car usage to travel to work, education and social and retail facilities

<sup>8</sup> Populations of Tier 4 centres will be private car dependant for access to services and employment in larger centres

Policy	B1	B2	P1	W1	W2	W3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
Settlement Hierarchy: Tier 5; 12 unserved settlements are identified: The Downs, Loughnavalley, Rathconrath, Taghmon, Gainstown, Ballinea, Miltown, Dysart, Moyvore, Baylin, Castledaly, Mount Temple, Tang, Toberclaive, Ballynahown, Streamstown, Horseleap, Streete, Crookedwood, Drumcree, Castletown-Finnea, Lismacaffrey, Archerstown (communal sewage treatment not acceptable, individual systems only); to direct rural residential development in a sustainable pattern, concentrating development in designated centres to sustain rural communities and rural facilities such as schools and shops and secondly to cater for the demand for rural housing from individuals that did not satisfy adopted 'local need' criteria.	/	/	/	/	- <sup>9</sup>	- <sup>10</sup>	/	/	/	/	/	/	+	/	/	- <sup>11</sup>	/	/	/
Special settlement status of Fore, Conservation Area Plan to be prepared	/	/	+	/	/	/	/	/	+	/	+	+	+	+	/	/	/	/	/
To prepare local area integrated land-use and transportation plans; for Mullingar and Athlone (in conjunction with Roscommon County Council) this will support community-based local transport services in rural areas. Its focus, however, may be larger Gateways. To put in place the local mechanisms to implement this, relating not just to investment but also to housing and other major developments.	/	/	+	/	/	/	+	/	+	/	/	/	/	/	/	+	/	/	/
To implement improved planning and implementation arrangements, including public transport and transport management in Gateways.	/	/	+	/	/	/	/	/	/	/	/	/	/	/	/	+	/	/	/

<sup>9</sup> See Footnote number 10

<sup>10</sup> The impact of the number of new houses in a location without proper services i.e. water and waste will potentially impact upon to public health and result in risk of water pollution. Interim data showing vulnerability of groundwaters to pollution has recently become available and has shown some of these are located in areas of extreme or high groundwater vulnerability, ie Castletown Finnea, Crookedwood, Taghman, Horseleap, Streamstown, Loughnavalley, Mount Temple, Baylin and Tang. In light of this new information, unserved settlements should not be considered at these locations. The unserved settlement policy should then be reviewed when final conclusive data is released from the GSI as part of preparation of a complete Groundwater Protection Scheme for the County

<sup>11</sup> Facilitation of housing development in rural areas without access to public transport services or employment within walking distance will result on reliance on the private car. Sustainable rural transport services should be given greater support in the Draft Plan, such as the rural bus initiative. Policies contained in the Plan to strengthen the rural economy, develop the rural tourism industry and provide balanced development will help to increase employment opportunities in disadvantaged areas and reduce the need to travel for some rural dwellers.

Policy	B1	B2	P1	W1	W2	W3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
The Council will pursue the identification of identified lands for an SDZ with the relevant government departments. <sup>12</sup>	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
In advance of any permissions being granted in any designated unserved settlement, it is policy to complete a planning assessment and establish the 'development limits.' <sup>13</sup>	?	/	?	/	?	?	/	/	/	/	/	/	/	/	/	?	/	/	/
Any proposed development within the unserved settlements will be judged on their appropriateness and whether they would be more suitably located in the higher order settlements within the County's overall "settlement strategy".	/	/	+	/	/	/	/	/	/	/	/	/	+	/	/	/	/	/	/

### North Westmeath Strategy

Policy	B1	B2	P1	W1	W2	W3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
To implement the North Westmeath Strategy and to Support the Strategic Implementation Group;	? <sup>14</sup>	/	+ <sup>15</sup>	/	/	/	/	/	/	/	/	+	+	/	/	- 16	- 17	/	- 18
To support the North Westmeath Tourism and Leisure Task Force in developing North	?	/	+	/	/	/	/	/	/	/	/	+	+	/	/	-	-	/	-

<sup>12</sup> Any potential environmental impacts of implementing development proposed by an SDZ Scheme will be highlighted and assessed in detail through SEA process at that level and therefore it is not appropriate to deal with these issues at County Development Plan level

<sup>13</sup> See footnote number 10

<sup>14</sup> Potential impact to biodiversity, flora and fauna as with any greenfield development or development in a rural area – policies to offset potential implications are included in the natural heritage section of the plan, such as those to ensure that EIA is required as appropriate, to retain hedgerows and features of value, to ensure that planning with species of local provenance is used in new development

<sup>15</sup> The North Westmeath Strategy aims to provide for sustainable development in this rural area but since environmental considerations are integral to the strategy, implications in general will be minimal

<sup>16</sup> Potential negative impact to air quality in terms of increasing private car dependence since development for increased populations, employment or tourism in north Westmeath is not supported by adequate public transport facilities. Policies been included in the Draft Plan potentially offset this, which are to improve public transport provision throughout the county, improve facilities for walking and cycling and to support initiatives such as the rural bus initiative

<sup>17</sup> See footnote number 16

<sup>18</sup> See footnote number 16

Westmeath for sustainable tourism, recreation and leisure <sup>19</sup>																		
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<sup>19</sup> See footnotes as per above policy

Policy	B1	B2	P1	W1	W2	W3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
To support the North Westmeath Enterprise Development Task Force in developing sustainable enterprise in North Westmeath; <sup>20</sup>	?	/	+	/	/	/	/	/	/	/	/	+	+	/	/	-	-	/	-
To work with the North Westmeath Community Development Task Force to develop an enabled pro-active community;	/	/	+	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/

### Economy

Policy	B1	B2	P1	W1	W2	W3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
to facilitate enterprise and employment, and to cooperate with other agencies including the private sector in order to provide employment, support opportunities and in the promotion of the County as an attractive location for business which operates in a manner consistent with the NSS and the County Development Board Strategy.	/	/	+	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
to encourage planning and design to achieve better integration of industrial areas into the urban fabric of the County, resolving tensions between uses and enhancing the security and permeability of industrial areas for walkers and cyclists, and those with disabilities; as well as business.	/	/	+	/	/	/	/	/	+	/	/	/	+	/	/	+	/	/	/
to promote innovative economic sectors and encourage business 'clusters' that exploit links with one another and /or with third level institutions	/	/	+	/	/	/	/	/	+	/	/	/	/	/	/	/	/	/	/

<sup>20</sup> See footnotes as per above policy

Policy	B1	B2	P1	W1	W2	W3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
to support high quality proposals for the intensification or expansion of established key employers and/or institutions in the technology, pharmaceutical and knowledge sectors unless there are exceptional and overriding environmental impacts which cannot be adequately mitigated.	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
to encourage and facilitate, in a sustainable way, the growth and diversification of the County's tourist product/base, enabling an increase in the overall capacity and long term development of the industry, through the use of its statutory powers where appropriate.	/	/	/	/	/	/	/	/	+	/	/	/	/	/	/	/	/	/	/
to protect the natural resources upon which tourism is based through the enforcement of policies in relation to resource protection	+	+	+	/	+	+	/	/	+	/	+	+	+	+	+	/	/	/	/
to continue to control development, including tourist-related development in such a manner as to conserve and enhance the natural environment and therefore to serve the future of the tourist industry in the County.	+	+	+	/	+	+	/	/	/	+	/	+	+	+	+	/	/	/	+
To continue to protect the landscape, in particular High Amenity areas, from adverse affect of development, and thereby protect the primary tourism product.	+	+	+	/	+	+	/	/	/	/	/	+	+	+	/	/	/	/	/
To identify and reserve sites for heavy industry/bad neighbour type uses in Mullingar and Athlone. This objective will be secured within 12 months of the adoption of the County Development Plan	-	/	+	/	/	/	/	/	/	/	/	/	-	/	/	/	/	/	/

### Retailing

Policy	B1	B2	P1	W1	W2	W3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
A Hierarchy of retail centres has been established; County Function - Mullingar and Athlone Town Centres;	/	/	+	/	/	/	/	/	/	/	/	/	+	/	/	/	/	/	/
District Centres – Moate, Kilbeggan, Rochfortbridge, Kinnegad and Castlepollard;	/	/	+	/	/	/	/	/	/	/	/	/	+	/	/	/	/	/	/



Policy	B1	B2	P1	W1	W2	W3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
Neighbourhood functions – Mullingar Shopping Centre, Ashe Road, Robinstown, Ardmore/Marlinstown and Mullingar West.	/	/	+	/	/	/	/	/	/	/	/	/	+	/	/	/	/	/	/
Local functions – Glasson, Tyrellspass, Ballynacarrigy, Clonmellon, Delvin, Killucan and Rathwire.	/	/	+	/	/	/	/	/	/	/	/	/	+	/	/	/	/	/	/
Retail development in Mullingar will be focused in the town centre, and on edge-of-centre sites immediately adjoining the town centre. On the basis of existing commitments and proposals this would comprise the major Blackhall Place mixed use development scheme, and the Lynnpark retail warehousing development to the south, and could also incorporate other sites such as that the Fairgreen and at the Harbour Place Shopping Centre.	/	/	+ <sup>21</sup>	/	/	/	+	/	+	/	/	/	+	/	/	+	+	/	+
To resist the loss of retail units, to non-retail use, at pedestrian level, particularly in the primary shopping frontages of the towns of Athlone and Mullingar	/	/	+	/	/	/	/	/	/	/	/	/	+	/	/	/	/	/	/
To seek the replacement of retail uses in development schemes and ensure that such replacements are primarily at the pedestrian level;	/	/	+	/	/	/	/	/	/	/	/	/	+	/	/	/	/	/	/
To seek, where appropriate, the provision of new or increased retail facilities, particularly where: <ul style="list-style-type: none"> <li>Existing retail facilities are being replaced by non-retail uses;</li> <li>The site is in or close to a shopping centre;</li> <li>The site is close to a public transport interchange;</li> </ul>	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/

<sup>21</sup> Locating retail uses in the town centre, within walking distance of residential areas and close to public transport facilities encourages sustainable transport patterns

Policy	B1	B2	P1	W1	W2	W3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
To encourage retail uses in any new development scheme to provide a variety of size units compatible with the character of the area in which they are situated and to encourage large retail units in suitable areas;	/	/	+	/	/	/	/	/	+	/	/	/	+	/	/	+	/	/	/
To maintain and enhance the principal shopping areas by: - Seeking a clear predominance of shop uses; - Permitting financial and professional services, catering and local service uses where they do not harm the function and character of the major shopping areas;	/	/	+	/	/	/	/	/	/	/	/	/	+	/	/	/	/	/	/
To sustain the vitality and viability of the major shopping areas and to encourage measures to improve their attractiveness. In principal, a suitable frontage shall be maintained where a change of use from pedestrian level shop or catering use to financial and professional services or local service use is to be permitted.	/	/	+	/	/	/	/	/	/	/	/	/	+	/	/	/	/	/	/
To maintain the existing network of shopping areas and to focus new retail investment on those areas.	/	/	+	/	/	/	/	/	/	/	/	/	+	/	/	/	/	/	/
To promote the modernisation and renewal of those areas, whilst taking into account any historic context that may be involved.	/	/	+	/	/	/	/	/	/	/	+	+	+	/	/	/	/	/	/
In any large development, to favour permeability and the creation of public realm	/	/	+	/	/	/	/	/	+	/	/	/	+	/	/	/	/	/	/

Policy	B1	B2	P1	W1	W2	W3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
To address the problems of access, comfort, safety, quality of shopping and environmental quality.	/	/	+	/	/	/	/	/	+	/	/	/	+	/	/	/	/	/	/
To encourage retail development, including new forms of shopping which relates to the regeneration of existing Town Centres or to the needs of new communities. Proposals, which would undermine the vitality and viability of Retail Core areas or Town Centres as a whole will not normally be permitted.	/	/	+	/	/	/	+	/	+	/	/	/	+	/	/	/	/	/	/
To confirm and maintain the County's retail hierarchy as set out in the Retail Strategy for Westmeath.	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
To assess all retail proposals against the criteria and recommendations set down in the Retail Strategy for Westmeath and the Retail Planning: Guidelines for Planning Authorities, published by the Government of Ireland, January 2005	/	/	+	/	/	/	/	/	+	/	/	/	+	/	/	/	/	/	/

### Infrastructure

Policy	B1	B2	P1	W1	W2	W3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
to facilitate the development of public transport throughout the County but particularly where services can benefit the maximum number of people	/	/	+	/	/	/	/	/	+	/	/	/	/	/	/	+	+	/	+
to promote the use of, and encourage improvements to the public transport services and support initiatives designed to improve bus/coach and rail interchange facilities.	/	/	+	/	/	/	/	/	+	<sup>22</sup>	/	/	/	/	/	+	+	/	+

<sup>22</sup> Improvements to public transport services will impact positively by reducing the need to travel by private car, improving access to services for people from all sectors of society and reducing air pollution

Policy	B1	B2	P1	W 1	W 2	W 3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
to improve the standards and safety of the public roads and to protect the investment of public resources in the provision, improvement and maintenance of the public road network.	/	/	+	/	/	/	/	/	+	/	/	/	/	/	/	/	/	/	/
To strictly control development outside of major growth centres of Mullingar and Athlone	+	/	+	/	/	/	+	/	+	/	/	+	+	/	/	+	/	/	/
to co-operate with the National Roads Authority to identify need for Services areas for motorists along the route of the N6 dual carriageway and to implement proposals for provision and to assist in implementation.	- 23	?	/	/	/	/	- 24	/	+	/	/	?	?	/	?	/	/	/	/
To restrict development accessing national routes in cooperation with the NRA <sup>25</sup>	?	?	/	/	/	/	?	/	/	/	/	?	?	/	?	-	-	/	-
To ensure that environmental improvements, traffic calming and parking provision are provided for, which will respect and enhance the urban form of towns and villages.	/	/	+	/	/	/	/	/	+	/	+	/	+	/	/	/	/	/	+
To improve the streetscape environment for pedestrians and cyclists, by providing facilities to enhance safety and convenience and by ensuring they are adequately provided for in new development and introduced into existing development where possible.	/	/	+	/	/	/	/	/	+	/	/	/	+	/	/	+	+	/	+
to ensure the provision of adequate parking facilities to facilitate commercial activity and maintain a free flow of traffic in town centres and residential areas	/	/	+	/	/	/	/	/	/	/	/	/	+	/	/	/	/	/	/

<sup>23</sup> Development of service areas will require removal of habitats and will impact upon biodiversity. Such development should take account of features of biodiversity and natural heritage value along the N6 route such as intact bog (near Athlone), or other habitats

<sup>24</sup> Development of service areas at out-of-town centre locations will require that greenfield lands be developed and will impact on the viability of nearby urban centres

<sup>25</sup> This policy restricts development with a direct access point onto a national route. This would not necessarily control development that would have an impact on the national route such as development at interchanges; permitting such development could affect the carrying capacity, safety and efficiency of the national road network and could result in backed up traffic and associated negative environmental implications of air pollution. To mitigate against such affects the planning authority will manage development with strict accord to implementation of its retail strategy and settlement policies, which aim to prevent development at inappropriate locations.

Policy	B1	B2	P1	W 1	W 2	W 3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
to require major developments and existing large employers to promote alternative modes of transport for workers as part of their mobility plans	/	/	+	/	/	/	/	/	+	/	/	/	/	/	/	+	+	/	+
To ensure that new development is not itself subject to an inappropriate risk of neither flooding nor increase flood risk or flood damage at other locations	+	+	/	/	+	+	/	/	/	+	/	/	/	/	/	/	/	/	/
To ensure that development that is sensitive to the effects of flooding will generally not be permitted in flood prone or marginal areas.	+	+	/	/	+	+	/	/	/	+	/	/	/	/	/	/	/	/	/
To require all new large scale developments in all designated settlements to provide 'Sustainable Urban Drainage Systems' (SUDS) as part of their development proposals.	+	+	/	/	+	+	/	/	/	+	/	/	/	/	/	/	/	/	/
to support the coordinated and focused development and extension of broadband infrastructure throughout the county.	/	/	+	/	/	/	/	/	+	/	/	/	/	/	/	/	/	/	/
to support telecommunications service provision subject to avoiding adverse visual impacts, overprovision and subject to the controls set out in Part 3	/	/	+	/	/	/	/	/	+	/	/	/	/	/	/	/	/	/	/
to promote renewable forms of energy where it is consistent with the proper planning and development of an area.	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	+	+	/
to favour the use of renewable energy as a contribution to the energy demand of all new buildings.	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	+	+	/
to encourage the development of small scale wind energy development and single turbines in urban and rural areas, including residential areas, and industrial parks, provided they do not negatively impact upon the environmental quality or residential amenity of the area.	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	+	+	/

Policy	B1	B2	P1	W 1	W 2	W 3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
It shall be a policy of the Council to prohibit the in-depth development of unserved land where there is a supply of served land available in the area adequate to accommodate all reasonable expectations of development. <sup>26</sup>	?	/	+	/	+	+	?	/	/	/	/	/	/	+	/	/	/	/	/
It shall be a policy of the Council to require that individual septic tank drainage systems be provided in accordance with the standards set out in Environmental Protection Authority, EPA's publication, 'Waste Water Treatment Manual, Treatment Systems for Single Houses', 2000, as may be amended.	/	/	/	/	?	?	/	/	/	/	/	/	/	/	/	/	/	/	/
It shall be a policy of the Council to secure the taking of adequate measures by land users in the treatment and disposal of effluent to prevent the pollution of rivers and watercourses generally and to safeguard human health and animal, fish and plant life.	+	+	+	/	+	+	/	/	+	/	/	/	/	+	/	/	/	/	/
It is the policy of the Council to support the co-ordinated and focused development and extension of broadband infrastructure throughout the county.	/	/	+	/	/	/	/	/	+	/	/	/	/	/	/	/	/	/	/
It is the policy of the Council to support telecommunications service provision subject to avoiding adverse visual impacts, overprovision and subject to the controls set out in Part 7	/	/	/	/	/	/	/	/	+	/	/	+	+	/	/	/	/	/	/
It is the policy of the Planning Authority to promote renewable forms of energy where it is consistent with the proper planning and development of an area;	/	/	/	/	/	/	/	/	+	/	/	/	/	/	/	/	+	+	/

<sup>26</sup> Potentially positive impacts – if serviced lands in question are not sensitive in terms of natural heritage, biodiversity, and particularly if serviced lands in question are brownfield lands with good public transport linkages as opposed to greenfield lands on the outskirts of villages/towns

Policy	B1	B2	P1	W 1	W 2	W 3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
It is the policy of the Council to favour the use of renewable energy as a contribution to the energy demand of all new buildings.	/	/	/	/	/	/	/	/	+	/	/	/	/	/	/	/	+	+	/
It is the policy of the Council to encourage the development of small-scale wind energy development and single turbines in urban and rural areas, including residential areas, and industrial parks, provided they do not negatively impact upon the environmental quality or residential amenity of the area. <sup>27</sup>	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	+	+	/

### Housing

Policy	B1	B2	P1	W 1	W 2	W 3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
It is the policy of the planning authority to implement the Housing Strategy... comprising three elements:  1. To ensure that sufficient zoned and serviced land is available in designated growth centres within the County to accommodate the estimated housing requirements of such centres during the currency of the Plan. 2. To provide directly for social and affordable housing solutions through its own house building programme, assistance to other agencies and individuals, acquisition of dwellings and other special programmes. 3. To further provide for social and affordable housing through Part V of the Planning and Development Act 2000.	/	/	+	/	/	/	/	/	+	/	/	/	/	/	/	/	/	/	/

<sup>27</sup> Small scale wind energy development proposals will be dealt with on a case by case basis with consideration of potential for impacts to residential amenity, biodiversity, flora and fauna and landscape

Policy	B1	B2	P1	W 1	W 2	W 3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
It is policy to secure the provision of social and affordable housing in accordance with the adopted Housing Strategy to meet the needs of all house holds currently not provided for, including the elderly.	/	/	+	/	/	/	/	/	+	/	/	/	/	/	/	/	/	/	/
To retain existing housing stock and generally resist the loss of residential accommodation.	/	/	+	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
To promote residential accommodation in town centres as part of mixed-use developments and above existing shops.	/	/	/	/	/	/	+	/	/	/	/	/	+	/	/	+	/	/	/
To provide sufficient land to facilitate the realisation of the Housing Strategy.	/	/	/	/	/	/	/	/	+	/	/	/	/	/	/	/	/	/	/
To provide ensure that accommodation which is purpose built for elderly (with the exception of granny flats) should be located close to services such as Church, medical services, public house and shops (within 200m) and should be linked to services by a footpath lit by public lighting.	/	/	+	/	/	/	/	/	+	/	/	/	/	/	/	+	/	/	/
To provide for housing in rural areas to meet the needs of local communities. <sup>28</sup>	?	?	+	/	?	?	-	/	/	/	/	/	/	/	/	-	-	/	-
To ensure that new housing is built to acceptable design standards and existing housing is maintained and improved to a high standard.	/	/	+	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
To improve and sustain a high quality environment in all residential areas.	+	/	+	/	/	/	/	/	/	/	/	/	+	/	/	/	/	/	/
To promote sustainability, and encourage the careful use of resources both now and in the future and to reduce the use of energy and non-renewable resources by promoting the use of public transport and reducing car dependence through measures that reduce travel distances and the need to travel.	+	+	+	+	+	+	/	/	+	/	+	+	+	+	+	+	+	+	+

<sup>28</sup> Housing development in rural areas may cumulatively give rise to potentially significant impacts, such as loss of biodiversity and habitats due to development on greenfield lands, impacts to air and climate as a result of increased dependence on the private car and impacts to water quality, especially if rural housing developments include septic tank systems for on-site wastewater treatment. Rural housing will be regulated using the settlement hierarchy, one-off rural housing policy and local need criteria, policies for landscape and natural heritage protection and development control standards for on-site wastewater treatment. See further notes on rural housing policy.



Policy	B1	B2	P1	W 1	W 2	W 3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
To ensure that a suitable variety and mix of dwelling types and sizes is provided in developments to meet different needs, having regard to demographic and social changes (smaller household sizes, lower household formation age, immigration etc).	/	/	+	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
To support the right of every individual to own their own property, and to ensure a suitable range of tenure types, especially the Private Rented Sector to meet the needs of a more mobile population.	/	/	+	/	/	/	/	/	+	/	/	/	/	/	/	/	/	/	/
To encourage flexibility in the use of residential land and structures.	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
To facilitate the provision of social and affordable housing to meet the needs of first time buyers and the needs of other households currently under-provided for, such as households on modest incomes, single person households, people with disabilities, students, the elderly, etc, throughout the County.	/	/	+	/	/	/	/	/	+	/	/	/	/	/	/	/	/	/	/
To cater for the needs of the disadvantaged sectors of the community.	/	/	+	/	/	/	/	/	+	/	/	/	/	/	/	/	/	/	/
To promote social inclusion by encouraging the provision of community facilities and in particular of child care facilities in new and established residential areas.	/	/	+	/	/	/	/	/	+	/	/	/	/	/	/	/	/	/	/
To ensure as far as possible that “greenfield” housing development takes place on the basis of comprehensive action area plans prepared on the basis of the above objectives. <sup>29</sup>	?	/	/	/	/	/	-	/	/	/	/	/	?	/	/	?	/	/	/
To ensure, in accordance with Part 5 of the Planning Act 2000 that 20% of the land zoned for residential	/	/	/	/	/	/	/	/	+	/	/	/	/	/	/	/	/	/	/

<sup>29</sup> Greenfield housing development may cumulatively give rise to potentially significant impacts, such as loss of biodiversity and habitats depending on the scale of development. Policies have been included to offset this through standards for quality of public open space and planting with species of local provenance and objectives to resist the loss of hedgerows and native trees of value. The provision of comprehensive action plans will help to ensure that development takes place in an orderly manner and is phased so that the necessary services and infrastructure are provided in line with development

Policy	B1	B2	P1	W 1	W 2	W 3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
use, or for a mixture of residential and other uses, be made available for the provision of social and affordable housing.																			

<p><b>Rural Housing Policy</b></p> <p>In general, development outside of the development boundaries of the identifying settlement hierarchy will be allowable in the following circumstances:</p> <p>1. Persons who are actively engaged in agriculture, horticulture, forestry, bloodstock and peat industry.</p> <p>2. Members of farm families seeking to build on the family farm.</p> <p>3. Landowners and members of landowners' families (landowner for this purpose being defined as persons who owned the land in question at the date of adoption of the draft County Development Plan 2000).</p> <p>4. Persons employed locally whose employment would provide a service to the Local Community.</p> <p>5. Persons who have close personal, family or economic ties within the area, including returning emigrants.</p>	?	?	?	/	?	?	-	/	?	/	/	?	?	?	?	-	?	/	?
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<sup>30</sup> One-off rural housing raises a number of environmental concerns and if it is not 'rural generated'; necessary to sustain rural communities and economies it can be considered unsustainable. These environmental concerns include:

a) Where occupiers of rural housing are working, being educated or connecting with family in urban areas or elsewhere, extra trips are generated, resulting in a reliance on the private car and unsustainable transport patterns. The cumulative impact of such development will be the excessive emissions of greenhouse gases, which is contrary to our obligations under the Kyoto agreement.

b) Individual rural houses that are poorly sited and screened or located in sensitive or exposed environments or landscapes will negatively impact on the quality of the area. Cumulatively a large volume of rural housing development over time, however sensitively sited will impact visually upon landscape and natural amenity.

c) Single rural houses that rely on septic tank systems for on-site wastewater treatment can place surface and ground water resources under a significant risk of pollution and will be particularly harmful if located in areas of groundwater vulnerability.

The Sustainable Rural Housing Guidelines (2005) issued by the DoEHLG advises on the type of housing development that should be considered as rural generated; which should take account of the scope and extent of the housing needs to be considered in the area – whether beside a large town or more removed from such a centre; the categories of persons the guidelines cite as comprising rural generated are those who are an intrinsic part of the rural community, e.g., have lived for substantial periods of their lives in the area as members of the established rural community; or persons working full-time or part-time in the rural area e.g., in farming or natural resource related occupations or teaching in a rural school.

Policy	B1	B2	P1	W 1	W 2	W 3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
<b>Structurally Weak Rural Areas:</b> The policy in these areas is to accommodate any demand from individuals for permanent residential development subject to good planning practice. This policy will facilitate the expansion of the rural population and the maintenance of essential local services. The challenge in these areas is to distinguish between speculative house building and genuine long-term commitment to the area in question. <sup>31</sup>	?	?	?	/	?	?	-	/	?	/	/	?	?	?	?	-	?	/	?
<b>Strong Rural Areas Under Significant Urban Influence:</b> The objective in these areas is to maintain a stable population base in rural areas within a strong network of villages and small towns. The policy is to facilitate housing development by people who have strong links to the particular rural area and people who are an intrinsic part of the rural community. Such persons would normally have spent substantial periods of their lives living in rural areas as part of the established rural community e.g. people employed in the rural area including farmers and their sons and daughters, people originally from the rural area and wishing to return, people wishing to reside near elderly parents	?	?	?	/	?	?	-	/	?	/	/	?	?	?	?	-	?	/	?

Category five extends the categories beyond the Guidelines range by allowing for persons who have undefined close personal, family or economic ties within the rural area. While, the Guidelines represent policy taken at a higher level and therefore are more appropriately dealt with at that higher level, the extension of the categories of qualifying persons beyond the guidelines must be considered in this SEA.

Since the 'ties' within the rural area are undefined, this category could be loosely applied and rural housing that is not necessary to sustain rural communities and economies, which is therefore unsustainable, may be permissible. This will exacerbate environmental impacts in relation to the cumulative effects of rural housing, making such impacts significant.

In this regard, the Strategic Environmental Assessment recommends that category five of the proposed policy be amended to:

"Other persons who are an intrinsic part of the rural community in accordance with the Sustainable Rural Housing Guidelines, 2005"

Since rural housing, however necessary to sustain the rural community or economy may still result in negative environmental implications; policies and objectives have been formulated and included in the Draft Plan to address such potential impacts. These include those for High Amenity Areas, groundwater protection, landscape protection and the conservation of our natural heritage.

Proposals for one-off rural housing will be dealt with on a case-by-case basis and policy is contained in the Draft Plan to ensure that proposals contributing to ribbon development, those impacting on sensitive areas or environments or those likely to pose a significant threat to surface or groundwater resources will be strictly regulated. Rural Design Guidelines have been produced which will help to increase the quality of proposals so that impacts to the landscape will be minimised. An objective is included to encourage the development of sustainable rural transport initiatives with a view to reducing unsustainable transport patterns.

<sup>31</sup> See footnote 30

to provide security and care, elderly parents wishing to live near other family members, people who would have grown up in rural areas seeking to build their home close to other family members, people working in rural areas such as teachers in rural schools. <sup>32</sup>																			
It is the policy of the council that the Rural Design Guidelines should inform the siting and design of new rural houses and house extensions.	+	?	+	/	/	/	/	/	/	/	/	+	+	+	+	/	/	/	+

Policy	B1	B2	P1	W 1	W 2	W 3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
To favourably consider applications for the conversion and re-use of traditional farm buildings in rural areas to a residential use without applying the 'rural housing need' requirement.	?	/	/	/	?	?	/	/	?	/	/	?	?	/	/	-	/	/	?
To resist the demolition and replacement of traditional or vernacular rural housing, whose character merits retention, in order to protect the varied types of housing stock in rural areas and to preserve the rich built heritage in rural parts of the County.	/	/	/	/	/	/	/	/	/	/	+	+	+	/	/	/	/	/	/
Water catchment areas are designated around Lough Owel and Lough Lene in recognition of the important role these lakes provide in the supply of public water for much of the county. Applications for all developments without main drainage in the catchment areas will be examined in detail and will be refused if it is considered that the development proposed would be liable to give rise to pollution of the water source.	/	/	/	/	+	+	/	/	/	/	/	/	/	+	/	/	/	/	/
It is the policy of the Council to maintain a high environmental quality in these areas, in particular, development should not cause direct or indirect damage or interference to various environmental designated areas, archaeological monuments or buildings of artistic, historic or architectural value. The use of sympathetic materials	+	+	+	/	+	/	/	/	/	/	+	+	+	+	+	/	/	/	/

<sup>32</sup> See footnote 30

and finishes will be encouraged with regard to both new development and renovation of existing buildings.																			
The standards set out in the Residential Density Guidelines (1999) issued by the DoEHLG, will guide policy for residential densities	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑

### Environment and Heritage

Policy	B1	B2	P1	W1	W2	W3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
It is the policy of the Council to support the implementation of the Water Framework Directive and the River Basin District Management Plans for the County. The Council will takes steps to ensure the quality of surface and ground waters and will implement the overriding principle of waste management that 'the polluter pays' in respect of breaches of environmental laws.	+	+	+	/	+	+	/	/	+	/	/	/	/	+	/	/	/	/	/
The Council will support the development of and implementation of Groundwater Protection Scheme	/	/	/	/	+	+	/	/	/	/	/	/	/	+	/	/	/	/	/
It is the policy of the council to implement the objectives of the Waste Management Plan for the Midlands Region 2006-2010 and any subsequent plan, as well as EPA guidance.	+	+	+	/	+	+	/	+	+	/	/	+	+	+	/	/	/	/	/
The Council shall seek further activities to promote and widen recycling services during the life of the plan.	+	+	+	/	+	+	/	+	+	/	/	+	+	+	/	/	/	/	/
The Council will give high priority to potential air pollution problems when considering development proposals	/	/	+	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	+
The Council will give a higher priority to the potential problems of light pollution relating to new development and the intensification or alteration of existing development	/	/	+	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
Planning permission will not normally be granted for new developments or extensions of existing industrial, commercial, leisure, or other uses that produce significant and unacceptable levels of noise and/or vibration at site boundaries or within adjacent sensitive areas, especially residential areas	/	/	+	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
The Council will adopt "clean technologies" which cause	+	+	+	/	+	+	/	+	+	/	/	+	+	+	/	/	/	/	+

Policy	B1	B2	P1	W1	W2	W3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
little or no pollution and are economical in the use of natural resources in its own operations and encourage their adoption elsewhere.																			
The Council will liaise with other statutory bodies and agencies, including the EPA, Fisheries Boards, etc. in relation to its responsibility for environmental protection & services.	+	+	+	/	+	+	/	+	+	/	/	+	+	+	/	/	/	/	+
To protect, manage and enhance the natural heritage, biodiversity, landscape and environment of Co. Westmeath in recognition of its importance as a non-renewable resource, unique identifier and character of the county and as a natural resource asset.	+	+	+	/	+	+	/	/	+	/	/	+	+	+	+	/	/	/	/
To protect and conserve wild bird species and their habitats especially rare or vulnerable species and regularly occurring migratory species.	+	+	+	/	+	+	/	/	+	/	/	+	+	+	+	/	/	/	/
To protect and conserve proposed candidate Special Areas of Conservation.	+	+	+	/	+	+	/	/	+	/	/	+	+	+	+	/	/	/	/
To protect plant, animal and species and habitats which have been identified by the Habitats Directive, Birds Directive, Wildlife Act (1976) and (Amendment Act) 2000, and the Flora Protection Order S.I No. 94 of 1999.	+	+	+	/	+	+	/	/	+	/	/	+	+	+	+	/	/	/	/
To require appropriate environmental assessment such as EIA or ecological appraisal for developments not directly connected with or necessary to the management of a European site, or a proposed European Site and which are likely to have significant effects on the site individually or cumulatively.	+	+	+	/	+	+	/	/	+	/	/	+	+	+	+	/	/	/	/
To consult with appropriate prescribed bodies and Government agencies when assessing development proposals affecting designated sites of European importance.	+	+	+	/	+	+	/	/	+	/	/	+	+	+	+	/	/	/	/
To protect and conserve Natural Heritage Areas and proposed Natural Heritage Areas.	+	+	+	/	+	+	/	/	+	/	/	+	+	+	+	/	/	/	/
To protect and conserve Natural Heritage Areas as they become designated and notified to the Local Authority	+	+	+	/	+	+	/	/	+	/	/	+	+	+	+	/	/	/	/

Policy	B1	B2	P1	W1	W2	W3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
during the lifetime of the Plan.																			
To consult with appropriate prescribed bodies and Government agencies when assessing development proposals affecting designated sites of national importance.	+	+	+	/	+	+	/	/	+	/	/	+	+	+	+	/	/	/	/
To maintain the conservation value of Council owned land within NHAs and promote the conservation value of Council owned lands adjoining NHAs.	+	+	+	/	+	+	/	/	+	/	/	+	+	+	+	/	/	/	/
It is the Council Policy to conserve the existing wide range of flora, fauna and wildlife habitats in the county through the preservation of ecological corridors and ecological networks. These are the habitats that link the areas of high nature conservation value.	+	+	+	/	+	+	/	/	+	/	/	+	+	+	+	/	/	/	/
The Council recognise the need to identify sites of geological and geomorphologic interest in the County and to protect these sites in the interest of protecting our geological heritage.	+	+	+	/	/	/	/	/	+	/	/	+	+	/	+	/	/	/	/
The Council shall protect and conserve the landscape, natural heritage and geodiversity value of esker system in the county.	+	+	+	/	/	/	/	/	+	/	/	+	+	/	+	/	/	/	/
It is the policy of Westmeath Co. Council to ensure the conservation of the county's peatlands in order to minimise the negative impact on natural diversity and the archaeological and cultural heritage of the county.	+	+	+	/	/	/	/	/	+	/	/	+	+	/	+	/	/	/	/
The council will preserve and enhance the amenity and biodiversity value of the County by preserving as far as possible trees, woodlands and hedgerows.	+	+	+	/	/	/	/	/	+	/	/	+	+	/	+	/	/	/	/
The Council will seek to protect and enhance the natural heritage and landscape character of the canal corridor and maintain them free from inappropriate development and to provide for public access where feasible.	+	+	+	/	/	/	/	/	+	/	/	+	+	/	+	/	/	/	/
The Council shall ensure that the County's floodplains, wetlands and watercourses are retained for their biodiversity and flood protection values.	+	+	+	/	+	+	/	/	+	+	/	+	+	+	+	/	/	/	/
To protect the distinctiveness of Co. Westmeath's landscapes and to recognise their capacity to sustainably integrate development within them.	+	+	+	/	+	+	/	/	+	+	/	+	+	+	+	/	/	/	/

Policy	B1	B2	P1	W1	W2	W3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
Northern Hills & Lakes: <ul style="list-style-type: none"> <li>- One off rural housing should be sensitively sited within the Northern Hills and lakes so as to blend in with the landscape. There is a need to consider views to and from hillsides when siting new development. New housing in close proximity to lakes and their associated high amenity areas should be designed to minimise its visual impact on the landscape. Guidance of the Co. Westmeath Rural Design Guidelines should be adhered to into development proposals.</li> <li>- The Council will seek to conserve and promote the high scenic quality of the area and explore the potential for natural resource tourism in conjunction with relevant Tourism and Community Development agencies.</li> <li>- Due to the high scenic quality of the landscape this area is not considered suitable for windfarms.</li> <li>- Quarrying should be managed to minimise impact on the ecological, archaeological and visual amenity of the hill and lake valley landscape.</li> <li>- The Council will actively promote the planting of native broadleaves of local provenance and seeks to maintain a broadleaf planting target of 30-50% in new plantations.</li> <li>- The Council will co-operate with Coillte and the Forest Service in promoting greater public access and recreational use of State Forests in the area.</li> <li>- The extent of archaeological sites within the Fore area deserve recognition as a wider archaeological landscape or complex and consideration shall be given to the use of Section 204 of the 2000-2004 Act for designation as a Landscape Conservation Area.</li> </ul>	+	+	+	/	+	+	/	/	+	+	/	+	+	+	+	/	/	/	/
Inny River Lowlands: <ul style="list-style-type: none"> <li>- Within the next 20 –30 years large areas of peatland will be exhausted and provide tracts of land that have potential for agriculture, habitat and amenity. The Council in consultation with relevant agencies will explore future</li> </ul>	+	+	+	/	+	+	/	/	+	+	/	+	+	+	+	/	/	/	/



Policy	B1	B2	P1	W1	W2	W3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
<p>potential of cut away peatlands that may offer opportunities for habitat creation or amenity and recreation areas such as community woodlands or parklands.</p> <ul style="list-style-type: none"> <li>- The occurrence of extensive cutaway peatland offers opportunities for siting of windfarms.</li> <li>- Many of the County's demesnes are listed as protected structures and along with their built curtilage recognition should be given to their associated gardens and landscapes.</li> <li>- The Council in consultation with the NIAH will seek to record these historic gardens and demesne landscapes any development proposals for these sites will be assessed according to best practise guidelines for Historic Landscapes.</li> <li>- The extent of archaeological sites within the Kilbixy area deserve recognition as a wider archaeological landscape or complex and consideration shall be given to the use of Section 204 of the 2000-2004 Act for designation as a Landscape Conservation Area.</li> </ul>																			
<p>River Deel Lowlands:</p> <ul style="list-style-type: none"> <li>- Due to the low-lying and in places open nature of the landscape rural housing in this area requires the creation of natural screening. Rural housing should incorporate planting of trees and hedgerows of native species and local provenance to retain and enhance landscape character.</li> <li>- This area offers capacity for wind farm development, cutaway peatland in particular offers opportunities for siting of windfarms. Siting of turbines should respect the local landscape.</li> <li>- The Council in consultation with the NIAH will seek to record historic gardens and landscape demesnes. Any development proposals for these sites will be assessed according to best practise guidelines for Historic Landscapes.</li> <li>- The Council will seek through development control to maintain appropriate buffer zones around the River Deel</li> </ul>	+	+	+	/	+	+	/	/	+	+	/	+	+	+	+	/	/	/	/

Policy	B1	B2	P1	W1	W2	W3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
<p>and the Stoneyford River and their associated wetlands to maintain the integrity and water quality of these riparian ecosystems.</p> <ul style="list-style-type: none"> <li>- Quarrying should be managed to minimise impact on the ecological, archaeological and visual landscape surrounding the extraction site.</li> <li>- The Council in consultation with the NIAH will seek to record vernacular buildings such as of thatch and mud walls and include in the Record of Protected Structures.</li> </ul>																			
<p>Central Hills &amp; Lakes</p> <ul style="list-style-type: none"> <li>- The high scenic quality of this area and natural features can provide the basis for natural resource tourism such as walking, cycling, boating and fishing. There is potential to develop walking and cycling trails and build upon the Westmeath Walkway. There is scope to promote the rich archaeological landscape around Lough Derravaragh. The Council will seek to conserve and promote the high scenic quality of the area and explore the potential for natural resource tourism in conjunction with relevant Tourism and Community Development agencies and within the context of Lake Management Plans.</li> <li>- The Council will seek through development control to maintain appropriate buffer zones around Lough Owel, Lough Derravaragh, other lakes and their associated wetlands to maintain the integrity and water quality of these ecosystems.</li> <li>- One off rural housing should be sensitively sited within the Central Hills and lakes so as to blend in with the landscape. There is a need to consider views to and from hillsides when siting new development. New housing in close proximity to lakes and their associated high amenity areas should be designed to minimise its visual impact on the landscape.</li> <li>- The council will seek to prepare a Village Design Statement for Multyfarnham in recognition of its significant architectural heritage and to inform future development in</li> </ul>	+	+	+	/	+	+	/	/	+	+	/	+	+	+	+	/	/	/	/

Policy	B1	B2	P1	W1	W2	W3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
the village. <ul style="list-style-type: none"> <li>- Due to the high scenic quality of the landscape this area is not considered suitable for windfarms.</li> <li>- Quarrying should be managed to minimise impact on the ecological, archaeological and visual amenity of the hill and lake-valley landscape.</li> <li>- The Council will conserve and enhance the high nature conservation value of the area and seek to maintain the interconnectivity or eco-networks linking these sites such as small woods, wetlands and hedgerows.</li> </ul>																			
Royal Canal Corridor <ul style="list-style-type: none"> <li>- Where it occurs afforestation limits the views to and from the canal corridor and dominates the landscape around it. It is policy to maintain the open visual corridor of the canal and promote planting of broadleaves in preference to conifer plantations.</li> <li>- Quarrying should be managed to minimise impact on the ecological, archaeological and visual corridor of the Canal.</li> <li>- One off rural housing should be sensitively sited within the Canal Corridor so as to blend in with the landscape. There is a need to consider views to and from hillsides when siting new development. New housing in close proximity to the canal also should be designed for its visual impact on the waterway corridor. The Council will seek through development control to maintain the visual landscape corridor of the Canal.</li> <li>- The Council will identify and protect all features of architectural and industrial heritage interest along the canal and ensure development proposals for these features are in sympathy with original character and design.</li> </ul>	+	+	+	/	+	+	/	/	+	+	/	+	+	+	+	/	/	/	/
Lough Ree / Shannon Corridor <ul style="list-style-type: none"> <li>- The Council shall adhere to the implementation of provisions of the Shannon River Basin Management Plan to assist the process of achieving good water status for the river catchment and ensure that future development within</li> </ul>	+	+	+	/	+	+	/	/	+	+	/	+	+	+	+	/	/	/	/

Policy	B1	B2	P1	W1	W2	W3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
<p>this LCA will adhere to the principles of this plan.</p> <ul style="list-style-type: none"> <li>- The Council will ensure that development will not impact on the significant conservation value of this area. The Council will conserve and enhance the high nature conservation value of the area and seek to maintain the interconnectivity or eco-networks linking these sites such as small woods, wetlands and hedgerows.</li> <li>- The high scenic quality, amenity value and significance for nature conservation of Lough Ree offers scope for recognising this area as a National Park. The council will explore the feasibility of promoting Lough Ree as a model for a "living" National Park.</li> <li>- Due to the high scenic quality of the landscape this area is not considered suitable for windfarms.</li> <li>- The Council shall take account of flood zones in any demand for development land, on flood plains and resist development proposals affecting benefit lands as identified by the OPW.</li> </ul>																			
<p>Western Lowlands</p> <ul style="list-style-type: none"> <li>- Quarrying of eskers leads to the removal of the entire ecosystem, sediments and biodiversity. There are other alternatives for the extraction industry. Massive reserves of sand and gravel are associated with other glacial deposits in the county and their exploitation would reduce the pressure off this irreplaceable natural resource.</li> <li>- Eskers contain significant reserves of water and are classed as locally important aquifers by the GSI. They are also highly vulnerable to groundwater pollution as the constituent sands and gravels are very porous. The introduction of waste material will remove the biodiversity interest of these pits and reduce their geomorphological interest. The Council will discourage the use of esker pits as sites for waste infill.</li> <li>- Design and Scale of housing should be informed by the Co. Westmeath Rural Design Guidelines. Ribbon Development should be curtailed on approach roads to</li> </ul>	+	+	+	/	+	+	/	/	+	+	/	+	+	+	+	/	/	/	/

Policy	B1	B2	P1	W1	W2	W3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
villages. - This area may offer potential for siting of Wind Farms. - The Council in consultation with the NIAH will seek to record historic gardens and landscape demesnes. Any development proposals for these sites will be assessed according to best practise guidelines for Historic Landscapes. - Roadways should incorporate natural screening, habitat creation and ecological design to mitigate for landscape features that have been removed during construction such as hedgerows and to help incorporate the new infrastructure into the natural environment. The Council shall require that landscaping schemes undertaken by the NRA use native species of local provenance																			
South Central Hills - Quarrying should be managed to minimise impact on the ecological, archaeological and visual landscape surrounding the extraction site. - Design and Scale of housing should be informed by the Co. Westmeath Design Guidelines. The council through Development control will curtail Ribbon Development on approach roads to villages. - Due to the visual quality of the landscape this area is not considered suitable for Windfarms.	+	+	+	/	+	+	/	/	+	+	/	+	+	+	+	/	/	/	/
Hill of Uisneach - The Council shall seek to have the Hill of Uisneach in public ownership to enable full appreciation of the sites as an educational, cultural and tourism feature for the region and the country. - The extent of archaeological sites within this area deserve recognition as a wider archaeological landscape or complex and consideration shall be given to the use of Section 204 of the 2000-2004 Act for designation as a Landscape Conservation Area. - Coniferous Plantation would detract from the landscape character of this area as it is important to preserve the	+	+	+	/	+	+	/	/	+	+	+	+	+	+	+	/	/	/	/

Policy	B1	B2	P1	W1	W2	W3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
<p>open views to and from the Hill of Uisneach.</p> <ul style="list-style-type: none"> <li>- Rural housing may impact to the detriment of this landscape by introducing new build elements to a currently unspoilt landscape. Any development proposals will be rigorously assessed against impacts on the archaeological and visual landscape of the area.</li> <li>- The archaeological and historical significance of this landscape area preclude it from being considered for siting of Windfarms.</li> </ul>																			
<p>Lough Ennell &amp; SE Corridor</p> <ul style="list-style-type: none"> <li>- New housing in close proximity to lakes and their associated high amenity areas should be designed to minimise visual impact on the landscape. The council will seek through development control to prohibit ribbon development especially in pressures areas surrounding the lake and on road corridors.</li> <li>- This area is considered as having medium capacity for wind farms. The area to the east of the LCA is considered to be potentially most suitable with extensive cutover peatland offering suitable sites as one area of potential.</li> <li>- Within the next 20 –30 years large areas of peatland will be exhausted and provide tracts of land that have potential for agriculture, habitat and amenity. The Council in consultation with relevant agencies will explore future potential of cut away peatlands that may offer opportunities for habitat creation or amenity and recreation areas such as community woodlands or parklands.</li> <li>- The Council in consultation with the NIAH will seek to record historic gardens and landscape demesnes. Any development proposals for these sites will be assessed according to best practise guidelines for Historic Landscapes.</li> <li>- The Council shall adhere to the implementation of provisions of the Shannon River Basin Management Plan to assist the process of achieving good water status for the river catchment and ensure that future development within</li> </ul>	+	+	+	/	+	+	/	/	+	+	/	+	+	+	+	/	/	/	/

Policy	B1	B2	P1	W1	W2	W3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
<p>this LCA will adhere to the principles of this plan.</p> <ul style="list-style-type: none"> <li>- The Council will ensure that development will not impact on the significant conservation value of this area. The Council will conserve and enhance the high nature conservation value of the area and seek to maintain the interconnectivity or eco-networks linking these sites such as small woods, wetlands and hedgerows.</li> </ul>																			
<p>South Westmeath Eskers</p> <ul style="list-style-type: none"> <li>- Eskers represent significant resources of sand and gravel and are of high value to the construction industry. Eskers in this area are vulnerable to pressure from extraction with the development of the M6 Motorway. Quarrying of eskers leads to the removal of the entire ecosystem, sediments and biodiversity. There are other alternatives for the extraction industry. Massive reserves of sand and gravel are associated with other glacial deposits in the county and their exploitation would reduce the pressure off this irreplaceable natural resource.</li> <li>- The significance of this landscape character area in terms of geodiversity, habitat value and potential for designation as a Geo-Park confers low capacity on this area to accommodate Windfarms.</li> <li>- Eskers contain significant reserves of water and are classed as locally important aquifers by the GSI. They are also highly vulnerable to groundwater pollution as the constituent sands and gravels are very porous. The introduction of waste material will remove the biodiversity interest of these pits and reduce their geomorphological interest. The Council will discourage the use of esker pits as sites for waste infill.</li> <li>- Design and Scale of housing should be informed by the Co. Westmeath Design Guidelines. Ribbon Development should be curtailed on approach roads to villages.</li> <li>- The Council will assess any proposals for development in proximity to esker sites with reference to the scientific, landscape value and groundwater vulnerability of the esker</li> </ul>	+	+	+	/	+	+	/	/	+	+	/	+	+	+	+	/	/	/	/

Policy	B1	B2	P1	W1	W2	W3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
landscape. - The Council will support in consultation with National Parks and Wildlife, Offaly County Council, The GSI and others, the designation of the south Westmeath esker landscape as a UNESCO geo-park; to promote the unique geological heritage of the area.																			
High Amenity Areas: - The Council will prohibit housing developments which are obviously urban- generated or speculative ventures in designated Areas of High Amenity. - Development will not be permitted where it would be injurious to or detract from the natural amenity of these areas. Siting, design and layout of all new developments shall be strictly controlled.	+	+	+	/	+	+	/	/	+	+	/	+	+	+	+	/	/	/	/
Revision of High Amenity Areas to Lough Derravaragh, Lough Sheelin and Lough Ree	-	-	-	/	-	/	/	/	/	/	/	/	/	-	-	/	/	/	/
Removal of the Lough Ree Buffer Zone	-	-	-	/	/	/	/	/	-	/	/	-	-	/	-	/	/	/	/
Partial extension of the Lough Ree High Amenity Area into the former Buffer Zone	+	+	+	/	/	/	/	+	/	/	/	+	+	+	+	/	/	/	/
It is the intention of the Council to prepare a Conservation Management Plan for Fore Special Heritage Area during the lifetime of this plan.	+	+	+	/	+	+	/	/	+	+	+	+	+	+	+	/	/	/	/
To preserve, improve and open up places or areas from which views or prospects of high amenity value may be enjoyed. No structure shall be so sited so as to hinder the preservation of such views or prospects.	+	+	+	/	+	+	/	/	+	+	/	+	+	+	+	/	/	/	/
It is the policy of the Council to protect and conserve buildings, structures and sites contained in the record of protected structures;	/	/	+	/	/	/	/	/	+	/	+	+	+	/	/	/	/	/	/
It is the policy of the Council that areas that have particular environmental qualities that derive from their overall layout, design and unity of character be designated as Architectural Conservation Areas and that the character of such areas is preserved.	/	/	+	/	/	/	/	/	+	/	+	+	+	/	/	/	/	/	/
It is a policy of the Council to encourage the rehabilitation, renovation and re-use of existing older buildings where	/	/	+	/	/	/	/	/	+	/	+	+	+	/	/	/	/	/	/



Policy	B1	B2	P1	W1	W2	W3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
appropriate.																			
It is a policy of the Council to retain where feasible, older buildings in towns which make a positive contribution to the character of the area or townscape.	/	/	+	/	/	/	/	/	+	/	+	+	+	/	/	/	/	/	/
It is a policy of the council that the setting of a proposed development within a demesne landscape is an important consideration and will be addressed in any planning application. Applicants, in such cases, will be required to demonstrate how they have taken account of the heritage resource.	/	/	+	/	/	/	/	/	+	/	+	+	+	/	/	/	/	/	/
It is the policy of the Council to preserve in situ all archaeological remains and sites of importance, such as National Monuments, Recorded Monuments, their setting and context and zones of archaeological potential. Within zones of archaeological potential and in the vicinity of Recorded Monuments, development will only be permitted where the Council considers the importance of the proposed development or other material considerations outweigh the value of the remains in question.	/	/	+	/	/	/	/	/	+	/	+	+	+	/	/	/	/	/	/
It is the policy of the Council to promote public awareness of the rich archaeological heritage that exists in County Westmeath through publications, research and the availability of information.	/	/	+	/	/	/	/	/	+	/	+	+	+	/	/	/	/	/	/
It is the policy of the Council to ensure that all sites of archaeological potential are protected from development that may injure any potentially important archaeological features or sites.	/	/	+	/	/	/	/	/	+	/	+	+	+	/	/	/	/	/	/

### Lake Management

Policy	B1	B2	P1	W1	W2	W3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
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To protect the distinctiveness of Co. Westmeath's lakeside landscapes as an asset for future generations to enjoy and appreciate and to recognise their capacity to sustainably integrate appropriate development within their environs.	/	/	+	/	/	/	/	/	+	/	/	+	+	+	/	/	/	/	/
The Council will seek to conserve and promote the high scenic quality of the lakeside areas as a regional resource and explore the potential for natural resource tourism in conjunction with relevant Tourism and Community Development agencies.	/	/	+	/	/	/	/	/	+	/	/	+	+	+	/	/	/	/	/
The Council will seek through development control and management processes to maintain and improve the water quality of all water bodies including lakes in accordance with ongoing development of Lake Basin Management Plans and upcoming Groundwater Protection Scheme.	+	+	+	/	+	+	/	/	+	/	/	/	/	+	/	/	/	/	/
The Council will conserve and enhance the high nature conservation value of the lake areas and seek to maintain the interconnectivity or eco-networks linking these sites such as small woods, wetlands and hedgerows.	+	+	+	/	+	+	/	/	+	/	/	+	+	+	/	/	/	/	/
To promote the rich archaeological landscape around the lakes, to conserve and promote the high scenic quality of the area and explore the potential for sustainable tourism in conjunction with relevant tourism and community development agencies and within the context of Lake Management Plans.	/	/	+	/	/	/	/	/	+	/	+	+	+	+	/	/	/	/	/
To work with landowners, walking groups and other interested parties in developing accessibility to lakeside areas for recreational walking.	+	+	+	/	/	/	/	/	+	/	/	+	+	+	/	+	/	/	/
To facilitate appropriate and sustainable community related development projects which fit within the context of the lakes study.	/	/	+	/	/	/	/	/	+	/	/	/	/	/	/	/	/	/	/

Target monies from development contribution schemes and other available funding towards specific lake related objectives over the timescale of the plan period.	+	+	+	/	+	+	/	/	+	/	+	+	+	+	/	/	/	/	/
Establish a cross sectoral Lakeside Development Steering within the Council group to achieve goals and ensure the ongoing sustainable development of the lakeside resource.	+	+	+	/	+	+	/	/	+	/	+	+	+	+	/	/	/	/	/
Take a leadership role in establishing dynamic and consistent working relationships with neighbouring authorities and other interested bodies such as Fáilte Ireland in developing a vision for the lakes.	+	+	+	/	+	+	/	/	+	/	+	+	+	+	/	/	/	/	/
It is the policy to develop linear parks, particularly along waterways, and to link existing parks and open spaces. Where lands along waterways are in private ownership it shall be policy, in any development proposal to secure public access along the waterway.	+	+	+	/	/	/	/	/	+	/	/	+	+	+	/	/	/	/	/
To deepen people's awareness, understanding, appreciation and concern for the lakes through promotion and discussion with all relevant interest groups and the public.	+	+	+	/	+	+	/	/	+	/	+	+	+	+	/	/	/	/	/

### Rural Development

Policy	B1	B2	P1	W1	W2	W3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
to protect the viability of farms and best quality land for agricultural and related uses, whilst at the same time finding alternative employment in or close to rural areas to sustain rural communities.	/	/	+	/	/	/	/	/	/	/	/	/	/	/	/	+	/	/	/
to permit home based economic activities at existing dwellings where, by virtue of their nature and scale, the activities can be accommodated without detriment to the operation of agricultural or horticultural farms in the vicinity, the amenities of rural areas, or the amenities of any adjoining residences	/	/	+	/	/	/	/	/	/	/	/	/	/	/	/	+	/	/	/

Policy	B1	B2	P1	W 1	W 2	W 3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
Encourage clustering of products to increase linkages within and reduce leakage from, the local economy. E.g. linkages between providers of accommodation and local farmers/niche food producers.	/	/	+	/	/	/	/	/	/	/	/	/	/	/	/	+	/	/	/
Support agri-tourism in the form of on-farm visitor accommodation and supplementary activities such as health farms, heritage and nature trails, pony trekking and boating; ensuring that all built elements are appropriately designed and satisfactorily assimilated into the landscape	/	/	+	/	/	/	/	/	/	/	/	+	+	/	/	+	/	/	/
to promote renewable forms of energy where it is consistent with the proper planning and development of an area. <sup>33</sup>	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	+	+	+
to assess any proposals for such development in relation to a specific evaluation of each site, including an evaluation of the potential impact of the development on the landscape and the amenities of the residents in the locality.	/	/	+	/	/	/	/	/	/	/	/	+	+	/	/	/	/	/	/
to protect areas of geological or geomorphological interest, high landscape or amenity value, areas of importance for biodiversity, flora or fauna, surface water and groundwater resources and important aquifers, important archaeological features from inappropriate development.	+	+	+	/	+	+	/	/	+	+	+	+	+	+	+	+	/	/	/
To take cognisance of existing levels of extraction in considering applications on greenfield sites and preference will be given to the sustainable	/	/	/	/	/	/	/	/	+	/	/	/	/	/	/	/	/	/	/

<sup>33</sup> Wind energy developments, if unsuitably sited in sensitive areas for biodiversity or landscape or close to housing could result in significant negative impacts. This issue is addressed through the identification of areas suitable and unsuitable for wind energy development as informed through the Landscape Character Assessment and policies for such development address the sensitivity of areas, siting etc. Applications for wind energy development will be dealt with on a case by case basis through the development management process, using development control standards set out in the Draft Plan and the potential for significant environmental impacts from larger scale developments will be dealt with through EIA at planning application stage

<sup>34</sup> This policy will impact positively by protecting valued features of natural heritage and will ensure that inappropriate developments cannot occur

continuation or extension of existing quarries																			
to ensure adequate supplies of aggregate resources to meet the future growth needs of the County and to facilitate the exploitation such resources where there is a proven need for a certain mineral/aggregate.	?	?	/	/	/	/	/	/	+	/	/	?	?	/	- 35	/	/	/	/
The Council will seek to safeguard valuable unworked deposits from permanent development that would prevent or hinder their future extraction	/	/	/	/	/	/	/	/	+	/	/	/	/	/	/	/	/	/	/
to ensure that the adverse impacts on the road network resulting from the extractive industry are minimised and that the full cost of road improvements which are necessary to facilitate extractive industries are borne by the industry itself	+	/	+	/	/	/	/	/	+	/	/	/	+	/	/	/	/	/	/

### Community Recreation and Amenity

Policy	B1	B2	P1	W 1	W 2	W 3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
to ensure that sufficient and appropriate open space, recreation and amenity facilities; public and private, urban and rural and passive and active are provided to meet the changing needs of new and existing communities;	/	/	+	/	/	/	/	/	+	/	/	/	+	/	/	/	/	/	+
To require high standards of provision of open space and recreation facilities as part of new residential schemes in quality of design, layout, landscaping and safety and security, especially in proposals for higher densities;	/	/	+	/	/	/	/	/	+	/	/	/	+	/	/	/	/	/	+
To ensure that new open space areas and recreation facilities are accessible to all sections of society, particularly children and the youth, the elderly and those with disabilities and to seek to improve the accessibility of existing facilities;	/	/	+	/	/	/	/	/	+	/	/	/	+	/	/	/	/	/	+

<sup>35</sup> Since such supplies of aggregate are contained within valuable esker ridges in the county, this policy if included without policies to protect eskers would place pressure on valuable eskers to be exploited for their aggregate potential. However the negative impacts of this policy are offset by the previous policies to protect valued eskers systems

Policy	B1	B2	P1	W 1	W 2	W 3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
To ensure that new open space and recreation facilities are within easy reach of homes, within walking distance and close to public transport services where feasible and appropriate;	/	/	+	/	/	/	/	/	+	/	/	/	+	/	/	/	/	/	+
To facilitate and encourage the enhancement of the quality and setting of the County's urban form;	/	/	+	/	/	/	/	/	+	/	/	/	+	/	/	/	/	/	+
to facilitate and support the adoption and implementation of a Play Strategy for the County to include a playgrounds policy in accordance with the National Children's Strategy, 2000;	/	/	+	/	/	/	/	/	+	/	/	/	+	/	/	/	/	/	/
To maximise the range of public play opportunities available to children, particularly children who are marginalised or disadvantaged or who have a disability;	/	/	+	/	/	/	/	/	+	/	/	/	/	/	/	/	/	/	/
To improve the quality and safety of playgrounds and play areas;	/	/	+	/	/	/	/	/	+	/	/	/	+	/	/	/	/	/	+
to promote, encourage and facilitate the increased participation in sports and physical activity by all age groups, including children, youth, parents, active age groups, school and community;	/	/	+	/	/	/	/	/	+	/	/	/	/	/	/	/	/	/	/
To ensure the sufficient and appropriate provision for local sports and recreation and to seek more efficient usage of existing resources;	/	/	+	/	/	/	/	/	+	/	/	/	/	/	/	/	/	/	/
to safeguard the County's natural amenity assets, including their ecological importance and to facilitate the enhancement of and improvement of access to such assets where desirable, in order to maximise the recreational, amenity and tourism potential in the County;	+	+	+	/	+	+	/	/	+	/	/	+	+	+	+	/	/	/	/
To safeguard and seek to improve existing recreation facilities and open spaces, including town parks, riverside and canal walks, urban squares, lakes and lakeshore amenities, walking and cycling routes, playing fields, playgrounds, etc., their form and setting;	+	+	+	/	+	+	/	/	+	/	/	+	+	+	+	/	/	/	+
To co-operate with representative bodies in order to support the improvement and development of walking and	+	+	+	/	/	/	/	/	+	/	/	+	+	+	/	+	+	/	+

Policy	B1	B2	P1	W 1	W 2	W 3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
cycling routes throughout the County in an environmentally sustainable way;																			
To integrate and link open space, within urban areas and to the countryside;	/	/	+	/	/	/	/	/	+	/	/	+	+	/	/	+	/	/	/
It is the policy of the Council to seek to ensure the provision of sufficient and appropriate recreational facilities to meet the needs of urban populations and which are of a scale and quality to attract and retain a critical mass of population in the Gateway towns;	/	/	+	/	/	/	/	/	+	/	/	/	+	/	/	/	/	/	+
To seek to ensure the provision of major urban amenity open space where desirable;	/	/	+	/	/	/	/	/	+	/	/	/	+	/	/	/	/	/	+
To safeguard the valuable amenity of existing recreational open spaces where appropriate;	/	/	+	/	/	/	/	/	+	/	/	/	+	/	/	/	/	/	+
to ensure that new residential development includes the provision of a high standard in public and private open space provision and provision for recreation and sporting activities where appropriate;	/	/	+	/	/	/	/	/	+	/	/	/	+	/	/	/	/	/	+
To place more emphasis on quality over quantity in public open space provision;	+	+	+	/	/	/	/	/	+	/	/	/	+	/	/	/	/	/	+
to support and facilitate the provision of a wide range of appropriate community facilities, including social services and premises for use by community and cultural groups that are of a high standard to meet the needs of new and existing communities, especially those deficient in adequate or sufficient services;	/	/	+	/	/	/	/	/	+	/	/	/	/	/	/	/	/	/	/
To ensure that the social needs of communities are appropriately reflected in all new development, especially the needs of the most disadvantaged and marginalised individuals and groups;	/	/	+	/	/	/	/	/	+	/	/	/	/	/	/	/	/	/	/
To ensure that community facilities provided adequately reflect the range of local needs, including the needs of marginalised groups, older people, people with disabilities and young people;	/	/	+	/	/	/	/	/	+	/	/	/	/	/	/	/	/	/	/
To seek the efficient use of new and existing community facilities so that the use of such resources may be	/	/	+	/	/	/	/	/	+	/	/	/	/	/	/	/	/	/	/

Policy	B1	B2	P1	W 1	W 2	W 3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
maximised;																			
To improve the availability of social, health, and education facilities in line with the pace of development;	/	/	+	/	/	/	/	/	+	/	/	/	/	/	/	/	/	/	/
To resist the loss of community facilities to other uses where there is no proposal to otherwise meet the need;	/	/	+	/	/	/	/	/	+	/	/	/	/	/	/	/	/	/	/
to recognise the needs of people with special needs that live or work in the County or who chose to visit, and to support the provision of facilities for people with special needs;	/	/	+	/	/	/	/	/	+	/	/	/	/	/	/	/	/	/	/
To consider cultural diversity and ethnic minorities in planning for the needs of communities and to seek to consult with the relevant agencies representing or working within these groups;	/	/	+	/	/	/	/	/	+	/	/	/	/	/	/	/	/	/	/
To ensure that community facilities and social services provided are accessible to all individuals, communities and sectors of society, including people with disabilities, and marginalised and disadvantaged groups;	/	/	+	/	/	/	/	/	+	/	/	/	/	/	/	/	/	/	/
to seek to ensure that the healthcare needs of individuals from all sectors of society are met appropriately in cooperation with the Healthcare Authorities;	/	/	+	/	/	/	/	/	+	/	/	/	/	/	/	/	/	/	/
to facilitate the provision for sufficient childcare facilities to support new and existing communities;	/	/	+	/	/	/	/	/	+	/	/	/	/	/	/	/	/	/	/
to provide for existing and future educational needs within the County through land use zoning and Local Area Planning;	/	/	+	/	/	/	/	/	+	/	/	/	/	/	/	/	/	/	/
To ensure that provision for education is made with regard to road safety, good design and efficiency in the use of resources;	/	/	+	/	/	/	/	/	+	/	/	/	/	/	/	/	/	/	/
to encourage the provision of new or improved arts, cultural and entertainment facilities, particularly in the parts of the County where there is a deficiency in such provision;	/	/	+	/	/	/	/	/	+	/	/	/	/	/	/	/	/	/	/
To actively foster and promote the arts in order to preserve and develop the unique history and heritage of the County;	/	/	+	/	/	/	/	/	+	/	/	/	/	/	/	/	/	/	/
To ensure that Arts, Culture and Entertainment facilities and activities are accessible to all in both physical and	/	/	+	/	/	/	/	/	+	/	/	/	/	/	/	/	/	/	/



Policy	B1	B2	P1	W1	W2	W3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
economic terms;																			
It is the policy of the Council to ensure the development of new or expansion of existing Arts, Culture and Entertainment facilities will only be permitted if they are of a scale and nature which is in character with the surrounding area, and nuisance will not be caused by reason of noise, excessive traffic generation and/or parking difficulties.	/	/	+	/	/	/	/	/	+	/	/	/	+	/	/	/	/	/	/
It is the policy of the Council to support the development of libraries and promote their use as centres of culture, recreation and information for the people of the County.	/	/	+	/	/	/	/	/	+	/	/	/	/	/	/	/	/	/	/

### Urban Areas

Policy	B1	B2	P1	W1	W2	W3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
To manage town centres in consultation with relevant stakeholders.	/	/	+	/	/	/	+	/	+	/	/	/	+	/	/	/	/	/	/
To monitor change of use to ensure that vitality and variety is maintained.	/	/	+	/	/	/	+	/	+	/	/	/	+	/	/	/	/	/	/
To facilitate and encourage residential use within town centres.	/	/	+	/	/	/	+	/	+	/	/	/	+	/	/	+	/	/	/

### Traffic Management

Policy	B1	B2	P1	W1	W2	W3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
to implement the Traffic Management Guidelines.	/	/	+	/	/	/	/	/	+	/	/	/	+	/	/	/	/	/	/
to consider the introduction of reduced traffic speed limits in certain town centre areas, in residential areas and in areas in the vicinity of schools.	/	/	+	/	/	/	/	/	+	/	/	/	+	/	/	/	/	/	/
to use road user audits for road improvement schemes, traffic management schemes, development schemes, new roads, and major maintenance schemes.	/	/	+	/	/	/	/	/	+	/	/	/	+	/	/	/	/	/	/
to promote walking and cycling as transport modes, in urban areas	/	/	+	/	/	/	+	/	+	/	/	/	+	/	/	+	/	/	/
to consult the public in relation to significant Traffic Management issues	/	/	+	/	/	/	/	/	+	/	/	/	+	/	/	/	/	/	/

Management issues.																			
to consider the Transport Impact of development proposals in accordance with the Traffic Management Guidelines.	/	/	+	/	/	/	/	/	+	/	/	/	+	/	/	/	/	/	/

### Urban Design

Policy	B1	B2	P1	W1	W2	W3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
To ensure that large Greenfield or redevelopment areas which are zoned for development should be subject to framework plans which may be prepared as Local Area Plans.	/	/	+	/	/	/	/	/	/	/	/	/	+	/	/	/	/	/	/
To prepare development briefs for smaller development sites, where appropriate.	/	/	+	/	/	/	/	/	/	/	/	/	+	/	/	/	/	/	/
To ensure that applications for significant development should be accompanied by Design Statements which should include a statement of how the proposal contributes to the achievement of urban design principles.	/	/	+	/	/	/	/	/	/	/	/	/	+	/	/	/	/	/	/
To adhere to urban design principles in its own functions, in particular its responsibility for the public realm.	/	/	+	/	/	/	/	/	/	/	/	/	+	/	/	/	/	/	/
The design and layout of all new housing developments on urban lands - Greenfield, Brownfield, infill and back land zoned sites will have regard to the character of the area and its location and aim to achieve attractive and sustainable development through better design. A greater emphasis will be placed on the surrounding area rather than the site in isolation and which promotes local identity and distinctiveness.	/	/	+	/	/	/	/	/	/	/	/	/	+	/	/	/	/	/	/
All Local Authority social and affordable housing schemes shall meet and exceed the minimum low energy performance standards detailed above.	/	/	+	/	/	/	/	/	/	/	/	/	/	/	/	/	+	+	+
To ensure that residential design should consider needs for life time use.	/	/	+	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/

## Mullingar Town Plan

Policy	B1	B2	P1	W 1	W 2	W 3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
The population projections for the County indicate that there will be an increase in population of in excess of 7,000 persons in Mullingar by 2014 (22,621 total 2014) and this will involve approximately an additional 2,966 houses.	- 36	/	? 37	/	-	- 38	/	/	/	/	/	/	? 39	? 40	/	? 41	/	/	/
To ensure housing of a high standard is provided in Mullingar to meet projected needs. It is the policy of the Council that every household has a dwelling suitable to its needs, located in an acceptable environment, at a price or rent it can afford.	/	/	+	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
To ensure that a sufficient amount of serviced land, for residential use is available for house building in Mullingar.	?	/	?	/	/	/	/	/	+	/	/	/	/	/	/	+	/	/	/
To promote higher residential densities at suitable locations, such as close to existing or proposed transport corridors and nodes and in proximity to town and neighbourhood centres.	/	/	+	/	/	/	+	/	+	/	/	/	/	/	/	+	/	/	/

<sup>36</sup> Rapid large scale population growth will require the development of previously undeveloped lands, resulting in a loss of biodiversity to a certain extent due to the removal of habitats.

<sup>37</sup> Influx of large numbers of new residents to the town will affect communities and, if not coupled with a comprehensive strategy to provide for adequate amenity, community facilities and employment opportunities, new residents will have to travel elsewhere for work or leisure, increasing unsustainable transport patterns. New development areas will be subject to local Area Planning which will ensure that facilities are provided in line with development.

<sup>38</sup> The rapid expansion and ongoing development pressures on Mullingar town and environs requires review of existing foul and surface water drainage system to include review of capacity and condition of network, storm overflows, assessment of future development areas, capacity of the river Brosna, the capacity of the waste water treatment plant and pumping stations, the effect of phosphate loading on Lough Ennell etc. Mullingar Sewerage Improvement Scheme is planned, with funding allocated under Water Services Investment Program 2005 – 2007, which will offset any issues of capacity and condition of existing system

<sup>39</sup> Potential impacts to townscape quality and cultural heritage with rapid development, offset by further policies for traffic management, urban design, Architectural Conservation Areas and environmental improvement in the remainder of the Mullingar Town Plan.

<sup>40</sup> Impacts to the quality of the River Brosna and Lough Ennell as a result of wastewater treatment capacity issue and phosphate loading as discussed, see footnote 38.

<sup>41</sup> Large scale population growth without corresponding employment uses in the town centre will increase the need for the Mullingar population to travel elsewhere for employment, eg Athlone and Dublin. While there is a train service to Dublin, there is currently no sustainable mode of transport to Athlone, increasing reliance on the private car. The Town Plan includes measures to encourage growth of employment uses and to include public transport provision.

Policy	B1	B2	P1	W 1	W 2	W 3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
To promote a variety of house types and sizes in individual schemes, particularly in any infill developments, so as to induce variety, interest and social integration within residential developments.	/	/	+	/	/	/	+	/	+	/	/	/	+	/	/	/	/	/	/
To promote quality design in residential environments, design that recognises the vulnerability of other road users such as pedestrians and cyclists and are designed around core principles of legibility, permeability and safety for all road users will be favoured to designs dominated by requirements to accommodate motor vehicles.	/	/	+	/	/	/	/	/	/	/	/	/	+	/	/	/	/	/	/
To ensure those areas, which are suitable for in-depth residential development, should only be developed in accordance with an overall plan for the comprehensive development of the area based on the neighbourhood concept and to integrate public transport provision.	/	/	+	/	/	/	+	/	+	/	/	/	+	/	/	+	/	/	/
To encourage the incorporation of suitable residential accommodation in urban renewal areas and town centre developments that will enhance the vitality and viability of the town centre.	/	/	+	/	/	/	+	/	+	/	/	/	+	/	/	+	/	/	/
To facilitate development based on the principle that people should be able to find as many of their requirements for daily living within easy reach of their homes, preferably within walking distance. The concept is centred on the principles of sustainable development; promote a high quality of design and layout in new residential development. A central function of land-use planning is to ensure that new residential development presents a high quality living environment for its residents, both in terms of the standard of individual dwelling units and in terms of the overall layout	/	/	+	/	/	/	+	/	+	/	/	/	+	/	/	+	/	/	/

Policy	B1	B2	P1	W1	W2	W3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
and appearance of the scheme. In implementing this policy the Council will evaluate proposals for new residential development in accordance with the criteria set out in Part 5 of the County Development Plan (Development Standards and Control).																			
It is the policy of the Council to conserve the existing housing stock wherever possible and to protect and improve residential amenities in existing residential areas, resisting the encroachment of inappropriate commercial activity in established residential areas.	/	/	+	/	/	/	/	/	+	/	/	/	+	/	/	/	/	/	/
To ensure that the naming of new residential development should reflect the local and historical context of the site, wherever practical, and should include the use of the Irish language.	/	/	+	/	/	/	/	/	/	/	/	/	+	/	/	/	/	/	/
To promote and encourage the provision of housing accommodation in accordance with the proposals outlined in the document "Social Housing - The Way Ahead"	/	/	+	/	/	/	/	/	+	/	/	/	/	/	/	/	/	/	/

### Moate Town Plan

Policy	B1	B2	P1	W1	W2	W3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
It is Council policy to promote Moate as an industrial location given its pivotal position on the Dublin / Galway road and to build on the existing industrial base. In particular the Council sees a need for serviced industrial sites to accommodate small-scale indigenous industries.	/	/	+	/	/	/	/	/	+	/	/	/	/	/	/	+	/	/	/
It shall be a policy of the Council to curtail ribbon development around Moate and to redirect development into the urban area.	/	/	+	/	/	/	/	/	+	/	/	+	+	/	/	+	/	/	/
To this end it shall be a policy of the Council to make land available towards the provision of serviced sites for private residential developments.	/	/	+	/	/	/	/	/	+	/	/	+	+	/	/	+	/	/	/

Policy	B1	B2	P1	W1	W2	W3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
It shall be the policy the Council in the implementation of its housing programme to provide a suitable mix of public housing as needed consistent with the availability of funding from the Department of Environment.	/	/	+	/	/	/	/	/	+	/	/	/	/	/	/	/	/	/	/
To require a high standard of design and layout for new residential areas and reasonable provision of services and facilities for residents.	/	/	+	/	/	/	/	/	+	/	/	/	/	/	/	+	/	/	/
To consolidate the existing retail and commercial function of the town centre area.	/	/	+	/	/	/	/	/	+	/	/	/	+	/	/	+	/	/	/
To protect the retail function of the town centre.	/	/	+	/	/	/	/	/	+	/	/	/	+	/	/	+	/	/	/
To ensure any retail development will compliment existing provision and complies with the Retail Strategy.	/	/	+	/	/	/	/	/	+	/	/	/	+	/	/	+	/	/	/
To protect the amenity of existing areas within and adjacent to the town centre which remain predominantly residential, from commercial and speculative development.	/	/	+	/	/	/	/	/	+	/	/	/	+	/	/	/	/	/	/
To retain active frontages within the town centre retail area	/	/	+	/	/	/	/	/	/	/	/	/	+	/	/	/	/	/	/
It is the policy of the Council to provide adequate water services to allow for the continued development of the town.	/	/	+	/	+	+	/	/	+	/	/	/	/	/	/	/	/	/	/
A programme of traffic management and safety improvement works has been drawn up for implementation over the term of the Plan and it is policy to implement such works to improve accessibility and traffic circulation.	/	/	+	/	/	/	/	/	+	/	/	/	+	/	/	/	/	/	/
New development shall be designed to accommodate the needs of all road users and not specifically designed around the requirements of motor vehicles, bicycle parking and facilities shall be provided for in all new development.	/	/	+	/	/	/	/	/	+	/	/	/	+	/	/	+	/	/	/
It is the policy of the Council to protect and conserve the town's natural, built and cultural heritage.	+	+	+	/	/	/	/	+	+	/	+	+	+	/	/	/	/	/	/
It shall be the policy of the Council that where possible major open space areas be integrated into the existing	/	/	+	/	/	/	/	/	+	/	/	/	+	/	/	/	/	/	/

Policy	B1	B2	P1	W1	W2	W3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
fabric of the town by means of pedestrian path systems.																			
It shall be a policy of the Council to enhance the physical environment of the town by commissioning: (a) A streetscape and public spaces study. (b) A heritage study of the town which will operate as a guide for development proposals and amenity improvements.	/	/	+	/	/	/	/	/	+	/	/	/	+	/	/	/	/	/	/
It shall be a policy of the Council to ensure that existing building lines and roof pitches are preserved.	/	/	+	/	/	/	/	/	/	/	/	/	+	/	/	/	/	/	/
With regard to advertising signs, it shall be a policy of the Council to encourage traditional signs; good standard of design, and restraint in the use of materials and illumination.	/	/	/	/	/	/	/	/	/	/	/	/	+	/	/	/	/	/	/

### Athlone Environs Plan

Policy	B1	B2	P1	W1	W2	W3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
To ensure that sufficient industrial land is available when required and to encourage and facilitate the expansion of existing industry where it conforms to the proper planning and development of the areas involved.	/	/	/	/	/	/	/	/	+	/	/	/	/	/	/	+	/	/	/
To facilitate the development of enterprise and the growth of employment in the Athlone Environs and to this end the Council will co-operate with other agencies including the private sector in promoting economic and social development and is assisting the provision of employment opportunities.	/	/	+	/	/	/	/	/	+	/	/	/	/	/	/	+	/	/	/
To accommodate "office-based industry" in Light Industrial-Technology zones. Office based industry is a growing sector which crosses the boundary between the traditional industrial and office use. It is concerned with the output of a specified product or service including: data processing, software development, information technology, technical and consulting, commercial laboratories/healthcare, research and	/	/	+	/	/	/	/	/	+	/	/	/	/	/	/	+	/	/	/

Policy	B1	B2	P1	W1	W2	W3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
development, media recording and general media associated uses, publishing, telemarketing etc.																			
To encourage the development of linkages between the Athlone Institute of Technology and local industry.	/	/	+	/	/	/	/	/	+	/	/	/	/	/	/	+	/	/	/
To encourage, facilitate and develop the creation and expansion of linkages, physical and otherwise, between third level educational institutions and the science business and technology centre.	/	/	+	/	/	/	/	/	+	/	/	/	/	/	/	+	/	/	/
To facilitate the establishment of grouped, small starter/incubator workshops, craft or service units in neighbourhood centres, subject to strict development control standards.	/	/	+	/	/	/	/	/	+	/	/	/	/	/	/	+	/	/	/
It is the policy of the Council that areas, which are suitable for in-depth residential development, should only be developed in accordance with an overall plan for the comprehensive development of the area.	/	/	+	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
To promote a high quality of design and layout in new residential development in accordance with the Residential Density Guidelines, (Department of the Environment & Local Government, 1999).	/	/	+	/	/	/	/	/	/	/	/	/	+	/	/	/	/	/	/
To conserve the existing housing stock wherever possible and to protect and improve residential amenities in existing residential areas.	/	/	+	/	/	/	/	/	+	/	/	/	+	/	/	/	/	/	/
Where lands have been developed on the basis of low density layouts in order to retain the open rural nature or details of interest, it is the Council's policy to retain some of the open character of these lands. The Council will require that 20% of the site area be retained for open space purposes.	/	/	+	/	/	/	/	/	/	/	/	+	+	/	/	/	/	/	/
It is the policy of the Council that the naming of new residential development should reflect the local and historical context of the site, wherever practical, and if possible should include the use of the Irish language.	/	/	+	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
To promote and encourage the provision of housing accommodation in accordance with the proposals outlined in the document "Social Housing - The Way	/	/	+	/	/	/	/	/	+	/	/	/	/	/	/	/	/	/	/



Policy	B1	B2	P1	W1	W2	W3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
Ahead".																			
To permit home based economic activity where, by virtue of its nature and scale, it can be accommodated without detriment to the amenities of the residential area	/	/	+	/	/	/	/	/	+	/	/	/	/	/	/	+	/	/	/
Applications for the provision of a crèche, playschool or other similar uses will be considered on the basis of local need, impact on the amenities of adjoining residents and traffic safety.	/	/	+	/	/	/	/	/	+	/	/	/	/	/	/	+	/	/	/
To promote commercial development, with the exception of shopping centres, at appropriate locations in the Athlone Environs.	/	/	+	/	/	/	/	/	+	/	/	/	/	/	/	+	/	/	/
Retailing in Athlone Environs will be confined to local provision. It is the policy of the Council that any retail development will compliment existing provision.	/	/	/	/	/	/	/	/	/	/	/	/	+	/	/	/	/	/	/
To continue the development and improvement of the water supply and sewerage services to provide for the anticipated water and drainage requirements of the area. Planning permissions will not be granted where it is likely that foul sewers or storm water systems will be unable to cope with the additional discharges. Where possible development shall be serviced by a gravity system. Where this is not possible and where it is in the interests of proper planning and sustainable development of the area, pumping will be considered as an alternative.	/	/	+	/	+	+	/	/	+	+	/	/	/	+	/	/	/	/	/
It is the policy of the Council that where a development is facilitated by public services which have been or will be provided, a contribution towards the cost of providing such services will be required as provided by the Planning and Development Acts, 2000 to 2006. Contributions will be levied at the rate prevailing at the time.	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
It is the policy of the Council that where a development includes the provision of roads, footpath	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/

Policy	B1	B2	P1	W1	W2	W3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
or other services the Council will normally require satisfactory security from the developer in order to secure the provision and maintenance of such services.																			
To conform to the Government and E.U. waste management hierarchy as follows: <ul style="list-style-type: none"> <li>• prevention</li> <li>• reduction</li> <li>• re-use</li> <li>• recycling and</li> <li>• safe disposal subject to economic and technical feasibility.</li> </ul> The Council will co-operate with other agencies in viable schemes for the extraction of useful materials from refuse for re-use or recycling.	/	/	+	/	/	/	/	+	/	/	/	/	/	/	/	/	/	/	/
To ensure that those public areas and areas visible from public places are maintained free of litter.	/	/	+	/	/	/	/	/	/	/	/	/	+	/	/	/	/	/	/
To eliminate all unauthorised fly tipping and to regulate and control the disposal of all builders spoil and rubble.	/	/	+	/	/	/	/	/	/	/	/	/	+	/	/	/	/	/	/
To support national and international initiatives for limiting emissions of Greenhouse gases and encouraging the development of renewable energy sources.	/	/	+	/	/	/	/	/	/	/	/	/	/	/	/	/	+	+	+
In line with the principles of sustainable development, the Council will encourage the development of appropriate energy sources, which make use of natural resources in an environmentally acceptable manner.	/	/	+	/	/	/	/	/	+	/	/	/	/	/	/	/	+	+	+
To co-operate with Athlone Town Council and Roscommon County Council and other agencies in improving traffic circulation in the town.	/	/	+	/	/	/	/	/	/	/	/	/	+	/	/	/	/	/	/
To take action as necessary to improve traffic circulation.	/	/	+	/	/	/	/	/	/	/	/	/	+	/	/	/	/	/	/
To promote the development of walking and cycling in the Athlone Environs. Cycling and walking are	/	/	+	/	/	/	/	/	/	/	/	/	+	/	/	+	/	/	/

Policy	B1	B2	P1	W1	W2	W3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
environmentally friendly, fuel-efficient and healthy modes of transport, and their development is in line with the principles of sustainability. It is intended to encourage the provision of secure bicycle parking facilities in district centres and to investigate the possibility of developing cycle-ways. It is intended to secure and further develop pathways.																			
To promote road safety and to avoid the creation of traffic hazard. In the design and/or improvement of roads and in the assessment of planning applications for new developments the safety of road users, including motorists, cyclists and pedestrians, will be a primary consideration. Cyclists and pedestrians are especially vulnerable in road accidents and new design must pay particular attention to securing their safety.	/	/	+	/	/	/	/	/	/	/	/	/	+	/	/	/	/	/	/
Where planning permissions are being granted for major new developments, such as offices, apartments, retail and industrial schemes, it is the policy of the Council to require that adequate covered facilities be provided for the secure parking of bicycles.	/	/	+	/	/	/	/	/	/	/	/	/	+	/	/	+	/	/	/
Where a development is not fully serviced by public car parking, it is the policy of the Council that a contribution towards the cost of providing such parking accommodation will be required, as provided for by the Local Government (Planning and Development) Acts 1963 - 93. This charge will be related to the type of development proposed and the cost of the provision of the car park.	/	/	+	/	/	/	/	/	/	/	/	/	+	/	/	/	/	/	/
To apply car parking requirement standards to all new developments in the Athlone Environs as stated in Part 7. It will also be policy to allow the relaxation of same where a proposed development warrants this relaxation, and it is in the best interests of the area concerned.	/	/	+	/	/	/	/	/	/	/	/	/	+	/	/	/	/	/	/
To protect from development those monuments within the Athlone Environs which are listed in the Sites and	/	/	+	/	/	/	/	/	/	/	+	/	+	/	/	/	/	/	/

Policy	B1	B2	P1	W1	W2	W3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
Monuments Record prepared by the Office of Public Works under Section 12 of the National Monuments (Amendment) Act 1994.																			
To prevent forms of development, which would be injurious to the town's architectural heritage and to identify and compile a list of those buildings and structures of architectural, historical, archaeological, artistic, cultural, scientific, technical or social interests for protection in the Record of Protected Structures (Schedule X of the County Development Plan).	/	/	+	/	/	/	/	/	/	/	+	/	+	/	/	/	/	/	/
To implement the provisions of the Derelict Sites Act 1990 to prevent or remove injury to amenity arising from dereliction.	/	/	+	/	/	/	/	/	/	/	/	/	+	/	/	/	/	/	/
To secure the development and renewal of obsolete areas, where they are identified.	/	/	+	/	/	/	/	/	/	/	/	/	+	/	/	/	/	/	/
To restrict non-essential advertising structures, or any advertising structures which would impact injuriously on amenity, the built environment or road safety, and to have unauthorised signs removed.	/	/	+	/	/	/	/	/	/	/	/	/	+	/	/	/	/	/	/
It is the policy of the Council that trees or groups of trees that form a significant feature in the landscape shall be preserved. In the implementation of this policy the Council will consider making Tree Preservation Orders, where it appears expedient in the interest of amenity.	/	/	+	/	/	/	/	/	/	/	/	+	+	/	/	/	/	/	/
To implement the provisions of both water pollution and air pollution legislation, in conjunction with other agencies, as appropriate.	+	+	+	/	+	+	/	/	/	/	/	/	/	+	/	/	/	/	+
To protect the natural environment of Athlone Environs especially the river Shannon, the remains of the Esker and the wilderness corridor provided by the railway lines.	+	+	+	/	+	+	/	/	+	/	/	+	+	+	+	/	/	/	/
It is the policy of the Council that adequate amenity and recreational open space and facilities, including community facilities and centres, should be available for all groups of the population at a convenient	+	/	+	/	/	/	/	/	+	/	/	/	+	/	/	+	/	/	/

Policy	B1	B2	P1	W1	W2	W3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
distance from their homes and places of work.																			
To retain the open space use of lands with established recreational uses where practicable. It is the intention that such lands be retained in open space use and that their condition be managed in such a way as to be conducive to the maintenance or improvement of the amenity of the area in which they are situated. In the event of permission for development being granted on these lands, open space provision in excess of normal standards will be required, to maintain the open character of such parts of the land as are considered necessary by the Council.	+	/	+	/	/	/	/	/	+	/	/	/	+	/	/	+	/	/	/
To link open space and amenity developments in order to secure integration of provision.	+	/	+	/	/	/	/	/	+	/	/	/	+	/	/	+	/	/	/
To ensure the protection of existing amenities from new developments or obsolescence.	+	/	+	/	/	/	/	/	+	/	/	/	+	/	/	+	/	/	/
To co-operate with sporting organisations who wish to develop or expand facilities.	/	/	+	/	/	/	/	/	+	/	/	/	+	/	/	+	/	/	/
It is the policy of the Council to protect and extend the network of pathways and public rights of way in the town.	/	/	+	/	/	/	/	/	+	/	/	/	+	/	/	+	/	/	/

#### Local Area Plans<sup>42</sup>

Overall strategic goals of LAPs	B1	B2	P1	W1	W2	W3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
To implement the policies and objectives of the County Development Plan.	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
To sustain, enhance and expand the role of the villages as a community and commercial service centre to the surrounding rural hinterland.	/	/	+	/	/	/	/	/	+	/	/	/	+	/	/	/	/	/	/
To provide for the orderly expansion of the villages. To ensure that the character of the village centre is protected in any new village centre development.	/	/	+	/	/	/	/	/	+	/	/	/	+	/	/	/	/	/	/

<sup>42</sup> Local Area Plans are dealt with in terms of overall policies and strategically in terms of the Settlement Strategy. The micro-level issues arising from LAPs will be dealt with as review of these Plans when they are screened individually for SEA.

Overall strategic goals of LAPs	B1	B2	P1	W1	W2	W3	S1	S2	S3	S4	C1	C2	C3	C4	C5	A1	A2	A3	A4
To ensure that sufficient and suitably located land is identified to meet the land use needs of the various functions of the village over the Plan period. <sup>43</sup>	/	/	+	/	/	/	/	/	+	/	/	/	+	/	/	/	/	/	/
To facilitate the provision of employment generating lands to afford the opportunity to live and work within the village.	/	/	+	/	/	/	/	/	+	/	/	/	+	/	/	+	/	/	/
To ensure that the necessary road infrastructure, public utilities and services, and recreational and community facilities are available to satisfy the development needs of the villages whether provided by the developer, by way of joint venture with the Local Authority, by other public or local development bodies or by the Local Authority itself.	/	/	+	/	/	/	/	/	+	/	/	/	+	/	/	+	/	/	/
To facilitate the provision of improved amenities within the village, and to secure the redevelopment and renewal of obsolete areas.	/	/	+	/	/	/	+	/	+	/	/	/	+	/	/	/	/	/	/
To secure safe and convenient movement corridors within the area, including pedestrian and cycle paths.	/	/	+	/	/	/	/	/	+	/	/	/	+	/	/	+	/	/	/
To enhance the environment of the village including the preservation of buildings and other features of archaeological, historic, artistic, cultural or social interest.	/	/	+	/	/	/	+	/	+	/	+	+	+	/	/	/	/	/	/

<sup>43</sup> Existing zoning in Delvin allows for a provision of an additional population of 2431 people, potentially bringing the population of this village to in excess of 2789 + people by 2014 if all this land were to be developed within the period of the plan.

- Existing zoning in Clonmellon allows for a provision of an additional population of 919 people, potentially bringing the population to in excess of 1610 + people by 2014.

Provision for this scale of population growth in such a short space of time without employment and public transport would potentially have a wide range of significant environmental effects, depending on the scale of development, such as negative impacts to air quality through increasing the need to travel by private car, population and human health due to unsustainable transport patterns encouraged, impacts to townscape quality with rapid change and to landscape and biodiversity with rapid development of greenfield lands.

With regard to the above considerations to ensure the logical and sustainable development of these areas, excess residentially zoned land in Delvin and Clonmellon should be de-zoned in the Draft County Development Plan 2008-2014.

## APPENDIX TWO — SCOPING REPORT

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## **Appendix Two: Scoping Report**

### **21. Introduction**

Scoping can be defined as “the procedure whereby the range of environmental issues and the level of detail to be included in the Environmental Report are decided upon, in consultation with the prescribed environmental authorities”.

The purpose of scoping is to identify the likely extent (geographic, temporal and thematic) and level of detail for the assessment and the information to be included in the SEA and Environmental Report. Scoping, in particular should identify those issues that are of most importance so that these can be addressed in most detail. Scoping should ensure that all relevant issues are identified and addressed in an appropriate manner. The scoping process identifies the issues that are likely to be important during the SEA process and eliminates those that are not of significance.

While scoping is primarily focused on identifying the impacts to be assessed and which of these are the most important, scoping should also address other issues including:

- Types of reasonable alternatives which ought to be considered
- Information and studies needed to characterise the existing environment
- Methods used to predict the magnitude of environmental effects
- Criteria against which the significance of effects should be evaluated
- Any further consultations to be carried out
- Environmental objectives and targets

### **2.2 Responses from Environmental Authorities re Scoping for SEA of Draft CDP**

#### **DoEHLG**

Regard must be had to national and international policy and guidance in assessing impacts to archaeological and architectural heritage.

Identify Preservation Orders, National Monuments in State Care and Recorded Monuments.

Identify areas of high archaeological potential or subsurface archaeology and consider records of excavations and chance finds of objects for this purpose.

In terms of architecture, the scale, type and location of significant development proposed in the vicinity of structures of architectural merit, including demesne lands.

Information relating to the architectural heritage should inform the Development Plan Review from the outset.

Have regard to the existing Record of Protected Structures and also the NIAH survey results when available.

Any significant change proposed by the Development Plan, even if appropriate, will bring about impacts to the architectural heritage. However, this change may be positive, since the do-nothing scenario may state that buildings may deteriorate from lack of use etc. Incorporating the architectural heritage in plans will enhance it.

Qualitative indicators rather than quantitative indicators are more appropriate in monitoring the significant effects of implementing the plan.

Where data gaps exist, this can simply be acknowledged in the Environmental Report.



## **EPA**

### **Water Quality and Supply**

The biggest environmental concern for Westmeath is surface and ground water pollution. It is important to adequately describe the current status of surface and groundwater quality and identify where issues arise and what are the pressure areas. The Water Framework Directive requires that we achieve good water quality by 2015 (the new CDP will run to 2014).

It will be necessary to identify protected species of fish and where they are located in the County, fish farming etc. Eels can be found in Lough Derravarragh. Salmonoid watercourses and other watercourses of value must be identified. It will be very important to make contact with the Fisheries Board in particular.

The use of jet-skis have resulted in pressure in terms of water pollution, noise disturbance etc. They can also be considered as safety and human health issues. Policies to restrict their use in particular areas may result in increased pressure in other areas and lakes.

Interrelationships exist in many areas, e.g. between water quality, tourism resources and provision for tourism, leisure, human health (e.g. noise disturbance from jet ski use), walking and cycling routes (positive in terms of human health).

Levels of eutrophication in water bodies should be established. Impacts of agriculture, piggeries etc on water quality should be considered. Identify where such land-uses are located? IPPC licences in the county can be used for an indication of where high-risk activities are concentrated.

Wastewater treatment – capacity problems exist due to storm water runoff into the system in towns. There is a need to upgrade the drainage system, especially in Moate to take the surface water away from the wastewater treatment facilities. Small-scale settlement policies will result in pressures on the provision of wastewater services. Growth of Mullingar is required by national policy but it is questionable whether the wastewater treatment capacity can support this growth.

Policies relating to water conservation, energy conservation and the achievement of quality water services will have positive impacts, which should be identified and highlighted.

Flooding issues are particularly relevant to Athlone from the AI River. Potential for development policies to increase flood risk should be assessed.

### **Natural Heritage**

The designated natural heritage sites should be set out by habitat type, e.g. wetlands, woodlands etc. Also we should identify what we have that is unique to the County, e.g. Scragh Bog, the Shannon Callows.

Features and habitats of national significance should be identified, e.g. the Corncrake, Callows etc. Policies for Big Meadow, Athlone will have to consider impacts to the Corncrake.

### **Landuse**

Corine mapping shows land uses for areas so this will be useful for the description of the environmental baseline.

### **Soil, Geology**

The geology and geomorphology should be considered as part of the process

## **Air, Noise and Human Health**

Air quality and human health will be affected by traffic congestion and traffic management policies. Traffic management plans/studies should be carried out. See Traffic Management plan for Mullingar.

An objective to re-open the Athlone to Mullingar rail line will have positive impacts (e.g. reduction in car traffic and consequently air pollution etc).

Quarries – impacts include dust and noise pollution, especially where blasting occurs. Impacts on human health and residential amenity. Road construction projects may have similar impacts.

Walking routes can impact positively on human health as access to the countryside is opened up to urban dwellers. Human health impacts may be assessed on data available such as air and water quality etc but a full health impact assessment is not necessary for SEA of Development Plans.

## **Waste management**

Litter control policies will have potentially positive impacts, e.g. increased litter wardens etc. Policies to introduce waste charges have resulted in increased dumping.

## **Landscape Character**

Landscape character policies are mandatory in the plans. Landscape character assessment is needed in Westmeath, as the landscape is very unique.

Lake management plans, would determine where on lakeshores that development may be allowed – should lakeshore development be entertained at all? E.g. at Lough Derravarragh, development proposed would be in NHA and adjacent to SPA. Lakes are considered 'primary products' when in pristine condition in the opinion of an Bord Fáilte. Should the focus be on maximising tourism potential or ensuring that such resources remain valuable (unspoilt, unpolluted etc).

Promotion of tourism product, e.g. promotion of cruising on the Shannon by Waterways Ireland will result in issues re protection of the landscape along the routes.

## **Renewable energy**

Renewable energy policies, e.g. windfarm development, see wind energy framework draft document produced by Forward Planning, 2004. Policies for exclusion areas and priority locations for windfarms –consider the landscape impacts, positive impacts? Visual impacts, impacts on bird populations should be considered. What areas are of greater efficiency for wind energy generation?

## **Zoning**

The present zoning for industrial development is for light industrial / technological and does not allow for more intensive industries such as car scrappage, mushroom composting. Policies may be needed to accommodate more than just light industrial activities. This will raise an issue re health impacts. All zoning will be part of the new CDP, how will this be dealt with in SEA?

## **Monitoring**

For monitoring it will be useful to link to existing monitoring programmes, e.g. using habitat info and loss of greenfield sites for landscape indicators in the absence of appropriate indicators. Quantitative indicators should be used where possible; they are more measurable. However, in scoping the DoEHLG suggested that qualitative indicators be used for the architectural heritage.

## **Conclusion**

In summary, environmental pressures on the County and Athlone town relate to surface water quality, lakes, salmonoid waters etc; groundwaters and pollution from septic tanks; wastewater treatment provision for increasing development; landscape impacts from development; tourism related development and tourist activity; biodiversity protection; rural housing and impacts of policies – restrictive/ facilitative; renewable energy; and maybe forestry in the future.

A challenge will be to find alternatives to conflicting policies, e.g. zoning elsewhere or don't include the policy at all.

Where we can't avoid the negative impacts, we must have mitigation measures, e.g. certification, introduction of by-laws on septic tanks for example. The Steering Group will be very useful in deciding on reasonable alternatives and realistic mitigation measures.

## **DCMNR**

Cognisance should be taken of the Departments generic guidelines as to what should be contained in the Environmental Report at :

<http://www.dcmnr.gov.ie/Marine/Environmental+Assessment/Environmental+Assessment.htm>

"Fishery Guidelines for Local Authority Works", DCMNR may be of some general help in drafting flood alleviation options sympathetic to fisheries concerns.

It is imperative that sufficient sanitary services infrastructure in terms of Sewage Treatment Plant facilities is in place in advance of permitting any further development where existing facilities are at or over capacity'.

From DCMNR Website:

In determining the likely significant effects of the plan or programme regard should be had to the need for the sustainable development of the inland and marine fisheries resource (including the conservation of fish and other species of fauna and flora, habitats and the biodiversity of inland and marine water ecosystems).

Consideration should be given to potential significant impacts on:

- Water quality
- Surface water hydrology
- Fish spawning and nursery areas
- Passage of migratory fish
- Areas of natural heritage importance including geological heritage sites
- Designated marine protected areas
- Biological Diversity
- Ecosystem structure and functioning
- Seabirds and marine mammals
- Fish and shellfish cultivation
- Sport and commercial fishing and angling
- Amenity and recreational areas
- Mineral and aggregate resources
- Sediment transport and coastal erosion
- Navigation
- Other legitimate use of the sea

## **Eastern Fisheries Board**

Consultation with Fisheries Boards as Recommended by DCMNR - Summary of the Eastern Regional Fisheries Board's General Requirements:

The main channel of the River Boyne and its tributaries including the Riverstown, Deel, Milltownpass, Stonyford, Kinnegad, etc. and Loughs Lene, Adeel, Bane and White can be considered salmonid and should be afforded the maximum protection possible.

All municipal wastewater treatment plants should not be overloaded. If the treatment plants are approaching capacity please ensure that there will be a moratorium on any new development until the plant is upgraded.

No culverting of waters should be allowed without prior clearance of the Eastern Regional Fisheries Board.

Westmeath County Council should require the zoning of buffer zones around watercourses based on based on national biological diversity strategy (protect, maintain and where possible enhance) particularly in relation to salmonid systems, which act as a 'barometer' of aquatic environmental quality (thus reflecting biological diversity importance).

### **Shannon Fisheries Board**

Consultation with Shannon Fisheries Board as recommended by DCMNR - Any future Development Plan should incorporate a cognisance of Water Framework Directive objectives and how these might be achieved in the context of sustainable development. This would include the need to maintain or reinstate water quality in the region's lakes to meet water framework directive targets and other targets associated with water quality e.g. blue flag status for Lough Ennell.

There is a need for sewage treatment plants with adequate capacity to be in place in advance of planning being granted in villages. Concerns over on-going maintenance of numerous privately run sewage treatment plants. The County Westmeath Environmental Report should consider, in particular the effects of the treatment plant in Mullingar town and its storm overflows should be considered in relation to water quality in the River Brosna and Lough Ennell.

Planning applications should be taking account of the EPA guidelines on wastewater treatment for small communities and for single houses, the reference in the Draft development plan refers to the standard SR6. of 1991, which has largely been superseded by the EPA guidelines (2.5.14. (vi)).

Building on flood plains is not sustainable and should not be permitted, the flood plain is an essential component of the aquatic ecosystem. Development on flood plains is particularly pertinent to the Athlone area.

Flood alleviation and drainage works have the potential to destroy fisheries habitat, but can be performed in a fisheries sensitive manner. This has particular relevance to the River Brosna and River AI.

The principles of Sustainable Urban Drainage should be utilised where possible.

The Board should be consulted about proposals in relation to culverting of watercourses.

The River Shannon is an integral part of the natural environment, which must be protected.

The environmental report should examine the effects of peat harvesting on water quality and fisheries habitat and consider ways to regulate such developments which sometimes falls outside of the Planning and Development Act due to the nature of multiple small scale developments.

An analysis of the need for education and promotional initiatives to limit the spread of zebra mussels is required to protect the heritage of Westmeath's lakes and a description of the current status of the distribution and spread of zebra mussels within Westmeath.

A review of the ban on jet skis and personal watercraft and a considered view on the effect that powerboats have on aquatic flora and fauna, water quality and fish stocks should be considered.

A report on IPPC licences in the region and compliance with these licences.

## **2.3 Conclusion**

Scoping for Strategic Environmental Assessment has been carried out as prescribed in the legislation and has ensured that the most appropriate scope and level of detail was included in the Environmental Report. All of the issues raised as part of scoping have been taken into account in carrying out the SEA and in preparing the Draft County Development Plan, making the entire process a more meaningful and effective one. This is reflected throughout the Environmental Report.

## APPENDIX THREE — IPPC & WASTE LICENCES

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APPENDIX THREE— IPPC & WASTE LICENCES

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### Appendix Three: IPPC and Waste Licences

Details of IPPC licensed facilities in Westmeath are as follows. The locations of the facilities can be seen on attached Map.

<b>Details of Application</b>	<b>Reg No. P0104-01</b>
Applicant Name:	Penn Racquet Sports Co. (Ireland)
Location of Facility:	Lynn Road, Mullingar, Co. Westmeath, West Meath.
Principal Class of Activity:	12.2.0: Surface Coatings
Description of Principal Class of Activity:	The manufacture or use of coating materials in processes with a capacity to make or use at least 10 tonnes per year of organic solvents, and powder coating manufacture with a capacity to produce at least 50 tonnes per year.
Other Classes of Activity:	n/a For a full description of all classes of activity, click <a href="#">here</a>
Application Date:	29/02/1996
Licence Status:	Licensed
Latest licence for this facility:	Reg No. <a href="#">P0104-01</a>

<b>Application</b>	<b>Reg No. P0123-01</b>
Applicant Name:	Tarkett (Ireland) Ltd
Location of Facility:	Newbrook, Mullingar, Co. Westmeath, West Meath.
Principal Class of Activity:	12.2.0: Surface Coatings
Description of Principal Class of Activity:	The manufacture or use of coating materials in processes with a capacity to make or use at least 10 tonnes per year of organic solvents, and powder coating manufacture with a capacity to produce at least 50 tonnes per year.
Other Classes of Activity:	11-3-0 For a full description of all classes of activity, click <a href="#">here</a>
Application Date:	29/02/1996
Licence Status:	Licensed
Latest licence for this facility:	Reg No. <a href="#">P0123-01</a>

<b>Details of Application</b>	<b>Reg No. P0124-01</b>
Applicant Name:	Taconic International Ltd.
Location of Facility:	Site No 22, Lynn Industrial Park, Mullingar, Co. Westmeath, West Meath.
Principal Class of Activity:	12.2.0: Surface Coatings
Description of Principal Class of Activity:	The manufacture or use of coating materials in processes with a capacity to make or use at least 10 tonnes per year of organic solvents, and powder coating manufacture with a capacity to produce at least 50 tonnes per year.
Other Classes of Activity:	n/a For a full description of all classes of activity, click <a href="#">here</a>
Application Date:	29/02/1996
Licence Status:	Licensed
Latest licence for this facility:	Reg No. <a href="#">P0124-01</a>

facility:	
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<b>Details of Application</b>	<b>Reg No. P0383-01</b>
Applicant Name:	Mr John Murphy
Location of Facility:	Clondrisse Pig Farm, Clondrisse, Killynan (Pratt), Cloghan, Co. Westmeath, West Meath.
Principal Class of Activity:	6.2.0: Intensive Agriculture
Description of Principal Class of Activity:	The rearing of pigs in installations, whether within the same complex or within 100 metres of that complex, where the capacity exceeds 1,000 units on gley soils or 3,000 units on other soils and where units have the following equivalents- 1 pig = 1 unit, 1 sow = 10 units.
Other Classes of Activity:	n/a For a full description of all classes of activity, click <a href="#">here</a>
Application Date:	25/02/1998
Licence Status:	Licensed
Latest licence for this facility:	Reg No. <a href="#">P0383-01</a>

<b>Details of Application</b>	<b>Reg No. P0433-01</b>
Applicant Name:	Mr Brian Kiernan
Location of Facility:	Ballymanus Pig Unit, Castlepollard, County Westmeath, West Meath.
Principal Class of Activity:	6.2.0: Intensive Agriculture
Description of Principal Class of Activity:	The rearing of pigs in installations, whether within the same complex or within 100 metres of that complex, where the capacity exceeds 1,000 units on gley soils or 3,000 units on other soils and where units have the following equivalents- 1 pig = 1 unit, 1 sow = 10 units.
Other Classes of Activity:	n/a For a full description of all classes of activity, click <a href="#">here</a>
Application Date:	28/05/1998
Licence Status:	Licensed
Latest licence for this facility:	Reg No. <a href="#">P0433-01</a>

<b>Details of Application</b>	<b>Reg No. P0501-01</b>
Applicant Name:	Bord na Mona Energy Limited
Location of Facility:	Derrygreenagh Group, c/o Derrygreenagh Works, Rochfordbridge, Mullingar, Co Westmeath, West Meath.
Principal Class of Activity:	1.4.0: Minerals and other materials
Description of Principal Class of Activity:	The extraction of peat in the course of business which involves an area exceeding 50 hectares.
Other Classes of Activity:	n/a For a full description of all classes of activity, click <a href="#">here</a>
Application Date:	9/06/1999
Licence Status:	Licensed
Latest licence for this facility:	Reg No. <a href="#">P0501-01</a>



Details of Application	Reg No. P0502-01
Applicant Name:	Bord Na Mona Energy Limited
Location of Facility:	Blackwater Group, c/o Blackwater Works, Blackwater, Shannonbridge,, Athlone, Co Westmeath, West Meath.
Principal Class of Activity:	1.4.0: Minerals and other materials
Description of Principal Class of Activity:	The extraction of peat in the course of business which involves an area exceeding 50 hectares.
Other Classes of Activity:	n/a For a full description of all classes of activity, click <a href="#">here</a>
Application Date:	9/06/1999
Licence Status:	Licensed
Latest licence for this facility:	Reg No. <a href="#">P0502-01</a>

Details of Application	Reg No. P0503-01
Applicant Name:	Bord na Mona Allen Peat Limited
Location of Facility:	Allen Group, c/o Derrygreenagh Works, Rochfordbridge, Mullingar, County Westmeath, West Meath.
Principal Class of Activity:	1.4.0: Minerals and other materials
Description of Principal Class of Activity:	The extraction of peat in the course of business which involves an area exceeding 50 hectares.
Other Classes of Activity:	n/a For a full description of all classes of activity, click <a href="#">here</a>
Application Date:	9/06/1999
Licence Status:	Licensed
Latest licence for this facility:	Reg No. <a href="#">P0503-01</a>

Details of Application	Reg No. P0609-01
Applicant Name:	Devon Lane Limited t/a Taconic
Location of Facility:	Forest Park, Mullingar, County Westmeath, West Meath.
Principal Class of Activity:	12.2.0: Surface Coatings
Description of Principal Class of Activity:	The manufacture or use of coating materials in processes with a capacity to make or use at least 10 tonnes per year of organic solvents, and powder coating manufacture with a capacity to produce at least 50 tonnes per year.
Other Classes of Activity:	n/a For a full description of all classes of activity, click <a href="#">here</a>
Application Date:	20/03/2001
Licence Status:	Licensed
Latest licence for this facility:	Reg No. <a href="#">P0609-01</a>

Details of Application	Reg No. P0626-01
Applicant Name:	Electricity Supply Board (Shannonbridge)
Location of Facility:	Shannonbridge Generating Station, Athlone, County Westmeath, West Meath.
Principal Class of Activity:	2.1.0: Energy

Description of Principal Class of Activity:	The production of energy in combustion plant the rated thermal input of which is equal to or greater than 50MW other than any such plant which makes direct use of the products of combustion in a manufacturing process.
Other Classes of Activity:	11-1-0 For a full description of all classes of activity, click <a href="#">here</a>
Application Date:	17/12/2001
Licence Status:	Licensed
Latest licence for this facility:	Reg No. <a href="#">P0626-01</a>

<b>Details of Application</b>	<b>Reg No. P0690-01</b>
Applicant Name:	Iralco
Location of Facility:	Collinstown, Mullingar, County Westmeath, West Meath.
Principal Class of Activity:	12.2.0: Surface Coatings
Description of Principal Class of Activity:	The manufacture or use of coating materials in processes with a capacity to make or use at least 10 tonnes per year of organic solvents, and powder coating manufacture with a capacity to produce at least 50 tonnes per year.
Other Classes of Activity:	13-2-0 For a full description of all classes of activity, click <a href="#">here</a>
Application Date:	3/12/2003
Licence Status:	Applied

<b>Details of Application</b>	<b>Reg No. P0697-01</b>
Applicant Name:	Messrs M Murphy and B Gilsehan
Location of Facility:	Ballynagall, Knockdrin, Mullingar, County Westmeath, West Meath.
Principal Class of Activity:	6.2.0: Intensive Agriculture
Description of Principal Class of Activity:	The rearing of pigs in installations, whether within the same complex or within 100 metres of that complex, where the capacity exceeds 1,000 units on gley soils or 3,000 units on other soils and where units have the following equivalents- 1 pig = 1 unit, 1 sow = 10 units.
Other Classes of Activity:	n/a For a full description of all classes of activity, click <a href="#">here</a>
Application Date:	13/02/2004
Licence Status:	Applied

<b>Details of Application</b>	<b>Reg No. P0713-01</b>
Applicant Name:	Mr Padraig Kiernan
Location of Facility:	Hodgestown Pig Unit, Hodgestown, Killucan, County Westmeath, West Meath.
Principal Class of Activity:	6.2.0: Intensive Agriculture
Description of Principal Class of Activity:	The rearing of pigs in installations, whether within the same complex or within 100 metres of that complex, where the capacity exceeds 1,000 units on gley soils or 3,000 units on other soils and where units have the following equivalents- 1 pig = 1 unit, 1 sow = 10 units.
Other Classes of	n/a

Activity:	For a full description of all classes of activity, click <a href="#">here</a>
Application Date:	17/05/2004
Licence Status:	Applied

<b>Details of Application</b>	<b>Reg No. P0781-01</b>
Applicant Name:	Dunbia (Ireland)
Location of Facility:	Rostella, Kilbeggan, County Westmeath, West Meath.
Principal Class of Activity:	7.4.2: Food and Drink
Description of Principal Class of Activity:	The slaughter of animals in installations where the daily capacity exceeds 1,500 units and where units have the following equivalents- 1 sheep = 1 unit, 1 pig = 2 units, 1 head of cattle = 5 units, and not included in paragraph 7.4.1.
Other Classes of Activity:	n/a For a full description of all classes of activity, click <a href="#">here</a>
Application Date:	3/03/2006
Licence Status:	Applied

Details of Waste Licences from the EPA are as follows:

<b>Details of Application</b>	<b>Reg No. W0028-01</b>
Applicant Name:	Westmeath County Council
Facility Name:	Ballydonagh Landfill
Location of Facility:	Ballydonagh, Dublin Road, Athlone, Co. Westmeath, West Meath.
Type of Facility:	Landfill
Principal Class of Activity:	3.5
Description of Principal Class of Activity:	Specially engineered landfill, including placement into lined discrete cells which are capped and isolated from one another and the environment.
Other Classes of Activity:	3.1,3.4,3.13,4.2,4.3,4.4,4.11,4.13 For a full description of all classes of activity, click <a href="#">here</a>
Application Date:	27/02/1998
Licence Status:	Licensed
Under Review/Replaced By:	Reg No. <a href="#">W0028-02</a>
Latest licence for this facility:	Reg No. <a href="#">W0028-02</a>

<b>Details of Application</b>	<b>Reg No. W0028-02</b>
Applicant Name:	Westmeath County Council
Facility Name:	Ballydonagh Landfill
Location of Facility:	Ballydonagh, Dublin Road, Athlone, Co. Westmeath, West Meath.
Type of Facility:	Landfill
Principal Class of Activity:	3.5
Description of	Specially engineered landfill, including placement into lined discrete

Principal Class of Activity:	cells which are capped and isolated from one another and the environment.
Other Classes of Activity:	3.1,3.4,3.13,4.2,4.3,4.4,4.11,4.13 For a full description of all classes of activity, click <a href="#">here</a>
Application Date:	17/10/2003
Licence Status:	Licensed
Replaced Licence:	Reg No. <a href="#">W0028-01</a>
Latest licence for this facility:	Reg No. <a href="#">W0028-02</a>

Details of Application	Reg No. W0071-01
Applicant Name:	Westmeath County Council
Facility Name:	Marlinstown Landfill
Location of Facility:	Marlinstown Bog, Mullingar, Co Westmeath, West Meath.
Type of Facility:	Landfill
Principal Class of Activity:	3.1
Description of Principal Class of Activity:	Deposit on, in or under land (including landfill).
Other Classes of Activity:	3.4,3.13,4.2,4.3,4.4,4.11,4.13 For a full description of all classes of activity, click <a href="#">here</a>
Application Date:	30/09/1998
Licence Status:	Licensed
Under Review/Replaced By:	Reg No. <a href="#">W0071-02</a>
Latest licence for this facility:	Reg No. <a href="#">W0071-02</a>

Details of Application	Reg No. W0071-02
Applicant Name:	Westmeath County Council
Facility Name:	Marlinstown Landfill
Location of Facility:	Marlinstown Bog, Mullingar, Co Westmeath, West Meath.
Type of Facility:	Landfill
Principal Class of Activity:	3.1
Description of Principal Class of Activity:	Deposit on, in or under land (including landfill).
Other Classes of Activity:	3.4,3.6,3.7,3.13,4.2,4.3,4.4,4.9,4.11,4.13 For a full description of all classes of activity, click <a href="#">here</a>
Application Date:	7/11/2002
Licence Status:	Licensed
Replaced Licence:	Reg No. <a href="#">W0071-01</a>
Latest licence for this facility:	Reg No. <a href="#">W0071-02</a>

Details of Application	Reg No. W0115-01
Applicant Name:	Soltec (Ireland) Limited
Facility Name:	Soltec (Ireland) Limited
Location of Facility:	Mullingar Business Park, Mullingar, County Westmeath, West Meath.
Type of Facility:	Hazardous Waste Facility
Principal Class of Activity:	4.1

Description of Principal Class of Activity:	Solvent reclamation or regeneration.
Other Classes of Activity:	4.13 For a full description of all classes of activity, click <a href="#">here</a>
Application Date:	30/09/1999
Licence Status:	Licensed
Latest licence for this facility:	Reg No. <a href="#">W0115-01</a>

<b>Details of Application</b>	<b>Reg No. W0153-01</b>
Applicant Name:	Greenstar Holdings Limited
Facility Name:	Annaskinnan Landfill
Location of Facility:	Annaskinnan, Co Westmeath, West Meath.
Type of Facility:	Landfill
Principal Class of Activity:	3.5
Description of Principal Class of Activity:	Specially engineered landfill, including placement into lined discrete cells which are capped and isolated from one another and the environment.
Other Classes of Activity:	4.4 For a full description of all classes of activity, click <a href="#">here</a>
Application Date:	17/05/2001
Licence Status:	Licensed
Latest licence for this facility:	Reg No. <a href="#">W0153-01</a>

<b>Details of Application</b>	<b>Reg No. W0197-01</b>
Applicant Name:	Wallace Recycling Ltd
Facility Name:	Wallace Recycling Ltd
Location of Facility:	16/17 Mullingar Business Park, Mullingar, Co Westmeath, West Meath.
Type of Facility:	Waste Transfer Station
Principal Class of Activity:	4.13
Description of Principal Class of Activity:	Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced.
Other Classes of Activity:	3.11,3.13,4.2,4.3,4.4 For a full description of all classes of activity, click <a href="#">here</a>
Application Date:	16/10/2003
Licence Status:	Licensed
Latest licence for this facility:	Reg No. <a href="#">W0197-01</a>

<b>Details of Application</b>	<b>Reg No. W0210-01</b>
Applicant Name:	Thorntons Recycling Centre Ltd
Facility Name:	Composting Facility
Location of Facility:	Pass of Kilbride, Milltownpass, Co Westmeath, West Meath.
Type of Facility:	Compost Facility

Principal Class of Activity:	4.2
Description of Principal Class of Activity:	Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes).
Other Classes of Activity:	3.6,3.13,4.3,4.4,4.13 For a full description of all classes of activity, click <a href="#">here</a>
Application Date:	13/09/2004
Licence Status:	Abandoned

## APPENDIX FOUR — EUROPEAN DESIGNATED SITES

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APPENDIX FOUR — EUROPEAN DESIGNATED SITES

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## Appendix Four: European Designated Sites

### Special Areas of Conservation

#### River Shannon Callows (000216)

**SITE NAME:** River Shannon Callows

**SITE CODE:** 000216

The River Shannon Callows is a long and diverse site which consists of seasonally flooded, semi-natural, lowland wet grassland, along and beside the river between the towns of Athlone and Portumna. It is approximately 50 km long and averages about 0.75 km wide (reaching 1.5 km wide in places). Along most of its length the site is bordered by raised bogs - many, but not all, in the process of large-scale harvesting - esker ridges and limestone-bedrock hills. The soils grade from silty-alluvial to peat. This site has a common boundary, and is closely associated, with two other sites of similar habitats, River Suck Callows and Little Brosna Callows.

The River Shannon Callows is mainly composed of lowland wet grassland. Different plant communities occur, depending on elevation, and therefore their flooding patterns. Two habitats listed on Annex I of the EU Habitats Directive are well represented within the site - *Molinia* meadows and lowland hay meadows. The former is characterised by the presence of the Meadow Thistle (*Cirsium dissectum*) and Purple Moor-grass (*Molinia caerulea*), while typical species in the latter include Meadow Fescue (*Festuca pratensis*), Rough Meadow-grass (*Poa trivialis*), Downy Oat-grass (*Avenula pubescens*), Common Knapweed (*Centaurea nigra*), Ribwort Plantain (*Plantago lanceolata*) and Common Sorrel (*Rumex acetosa*). In places these two habitats grade into one another.

Low-lying areas of the callows with more prolonged flooding are characterised by Floating Sweet-grass (*Glyceria fluitans*), Marsh Foxtail (*Alopecurus geniculatus*) and wetland herbs such as Yellow Cress (*Rorippa* spp.), Water Forget-me-not (*Myosotis scorpioides*) and Common Spike-rush (*Eleocharis palustris*). Most of the callows consist of a plant community characterised by Creeping Bent (*Agrostis stolonifera*), Brown Sedge (*Carex disticha*), Common Sedge (*Carex nigra*), and herbs such as Marsh Marigold (*Caltha palustris*) and Marsh Bedstraw (*Galium palustre*). While the more elevated and peaty areas are characterised by low-growing sedges, particularly Yellow Sedge (*Carex flava* agg.) and Star Sedge (*Carex echinata*). All these communities are very diverse in their total number of plant species, and include the scarce species Meadow-rue (*Thalictrum flavum*), Summer Snowflake (*Leucojum aestivum*), and Marsh Stitchwort (*Stellaria palustris*).

Two further Annex I habitats, both listed with priority status, have a minor though important presence within the site. Alluvial forest occurs on a series of alluvial islands just below the ESB weir near Meelick. Several of the islands are dominated by well grown woodland of mainly Ash (*Fraxinus excelsior*) and Willows (*Salix* spp.). The islands are prone to regular flooding from the river.

At Clorhane, an area of limestone pavement represents the only known example in Co Offaly. It is predominantly colonised by mature hazel woodland, with areas of open limestone and calcareous grassland interspersed. The open limestone pavement comprises bare or moss covered rock or rock with a very thin calcareous soil cover supporting a short grassy turf. The most notable plant in the grassy area is a substantial population of Green-winged Orchids (*Orchis morio*), which occurs with such species as Sweet Vernal Grass (*Anthoxanthum odoratum*), Quaking Grass (*Briza media*), sedges (*Carex caryophyllea*, *C. flacca*), Bird's-foot Trefoil (*Lotus corniculatus*), Knapweed (*Centaurea nigra*), and Narrow-leaved Plantain (*Plantago lanceolata*). Ferns associated with the cracks in the paving include *Asplenium trichomanes*, *A. ruta-muraria*, *A. adiantum-nigrum*, *Polypodium australe*. Bryophytes include *Grimmia apocarpa* and *Orthotrichum* cf. *anomalum*. Anthills are common within the open grassland. The hazel wood is well developed and has herbaceous species such as Primrose (*Primula vulgaris*), Violet (*Viola riviniana*), Wood Sorrel (*Oxalis acetosella*) and Herb Robert (*Geranium robertianum*). The wood is noted for its luxuriant growth of epiphytic mosses and liverworts, with such species as *Neckera crispa* and *Hylocomium brevirostre*. Yew (*Taxus baccata*) occurs at one area.



Other habitats of smaller area but equal importance within the site are lowland dry grassland, drainage ditches, freshwater marshes and reedbeds. The dry grassland areas, especially where they exist within hay meadows, are species-rich, and of two main types: calcareous grassland on glacial material, and dry grassland on levees of river alluvium. The former can contain many Orchid species, Cowslip (*Primula veris*), abundant Adder's-tongue Fern (*Ophioglossum vulgatum*) and Spring-sedge (*Carex caryophyllea*), and both contain an unusually wide variety of grasses, including False Oatgrass (*Arrhenatherum elatius*), Yellow Oatgrass (*Trisetum flavescens*), Meadow Foxtail (*Alopecurus pratense*), and Meadow Brome (*Bromus commutatus*). In places Summer Snowflake also occurs.

Good quality habitats on the edge of the callows included in the site are wet broad-leaved semi-natural woodland dominated by both Birch (*Betula pubescens*) and Alder (*Alnus glutinosa*) and dry broad-leaved woodland dominated by Hazel (*Corylus avellana*). There are also areas of raised bog, fen on old cut-away bog with Black Bog-rush (*Schoenus nigricans*), and a 'petrifying stream' with associated species-rich calcareous flush which supports Yellow Sedge (*Carex lepidocarpa*), Blunt-flowered Rush (*Juncus subnodulosus*) and Stoneworts (*Chara* spp.).

Two legally-protected plant species (Flora (Protection) Order 1999) occur in the site: Opposite-leaved Pondweed (*Groenlandia densa*) in drainage ditches, and Meadow Barley (*Hordeum secalinum*) on dry alluvial grassland. This is one of only two known inland sites for the Meadow Barley in Ireland. The Red Data Book plant Green-winged Orchid (*Orchis morio*) is known from dry calcareous grasslands within the site, while the site also supports a healthy population of Marsh Pea (*Lathyrus palustris*).

The site is of International Importance for wintering waterfowl as numbers regularly exceed the 20,000 threshold (mean of 34985 for 5 winters 1994/94-1998/99). Of particular note is an Internationally Important population of Whooper Swans (287). A further five species have populations of national importance (all figures are means for 5 winters 1995/96-1999/00): Mute Swan (349), Wigeon (2972), Golden Plover (4254), Lapwing (11578) and Black-tailed Godwit (388). Species which occur in numbers of regional or local importance include Bewick's Swan, Tufted Duck, Dunlin, Curlew and Redshank. The population of Dunlin is notable as it is one of the few regular inland flocks in Ireland. Small flocks of Greenland White-fronted Goose use the Shannon Callows; these are generally associated with larger flocks, which occur on the adjacent Little Brosna Callows and River Suck Callows.

Shoveler (an estimated 12 pairs in 1987) and Black-tailed Godwit (Icelandic race) (one or two pairs in 1987) breed within this site. These species are listed in the Red Data Book as being threatened in Ireland. The scarce bird Quail is also known to breed within the area. The Callows continues to hold over 40% of the Irish population of the globally endangered Corncrake, although numbers have declined in recent years. A total of 66 calling birds were recorded in 1999. The total population of breeding waders (Lapwing, Redshank, Snipe and Curlew) in 1987 was one of three major concentrations in Ireland and Britain. The breeding Redshank, numbers was estimated at 10% of the Irish population, making it nationally significant. Also, the Annex I species Merlin and Hen Harrier are regularly reported hunting over the callows during the breeding season and in autumn and winter.

This site holds a population of Otter, a species listed on Annex II of the EU Habitats Directive, while the Irish Hare, which is listed in the Irish Red Data Book, is a common sight on the callows.

The Shannon Callows are used for summer dry-stock grazing (mostly cattle, with some sheep and a few horses), and permanent hay meadow. About 30 ha is a nature reserve owned by voluntary conservation bodies. The River Shannon is used increasingly for recreational purposes with coarse angling and boating accounting for much of the visitor numbers. Intermittent and scattered damage to the habitats has occurred due to over-deepening of drains and peat silt deposition, water-skiing, ploughing and neglect of hay meadow (or reversion to pasture). However, none of these can as of yet be said to be serious. Threats to the quality of the site may come from the siting of boating marinas in areas away from centres of population, fertilising of botanically-rich fields, the use of herbicides, reversion of hay meadow to pasture, neglect of pasture and hay meadow, disturbance of birds by boaters, anglers, birdwatchers and the general tourist. The maintenance of generally high water levels in winter and spring benefits all aspects of the flora and fauna, but in this regard, summer flooding is a threat to breeding birds, and may cause neglect of farming.

The Shannon Callows has by far the largest area of lowland semi-natural grassland and associated aquatic habitats in Ireland and one in which there is least disturbance of natural wetland processes. Botanically, it is extremely diverse with two legally protected species of plants and many scarce species. Excellent examples of two habitats listed on Annex I of the EU Habitats Directive occur within the site - *Molinia* meadows and lowland hay meadows with good examples of a further two Annex habitats (both with priority status). In winter the site is internationally important for numbers and species of waterfowl. In spring it feeds large numbers of birds on migration. And in summer it holds very large numbers of breeding waders, rare breeding birds and the endangered Corncrake, as well as a very wide variety of more common grassland and wetland birds. The presence of Otter, an Annex II species, adds further importance to the site.

#### **Lough Ree (000440)**

**SITE NAME:** Lough Ree

**SITE CODE:** 000440

Lough Ree is the third largest lake in the Republic of Ireland and is situated, in an ice-deepened depression in Carboniferous Limestone, on the River Shannon system between Lanesborough and Athlone. Some of its features (including the islands) are based on glacial drift. It has a very long, indented shoreline and hence has many sheltered bays. Although the main habitat, by area, is the lake itself, interesting shore-line, terrestrial and semi-aquatic habitats also occur.

The greater part of Lough Ree is less than 10m in depth, but there are six deep troughs running from north to south, reaching a maximum depth of about 36m just west of Inchmore. The lake has been classified as mesotrophic in quality, but the size of the system means that a range of conditions prevail depending on, for example, rock type. This gives rise to local variations in nutrient status and pH, which in turn result in variations in the phytoplankton and macrophyte flora, and species indicative of oligotrophic, mesotrophic, eutrophic and base-rich situations occur. The water of Lough Ree tends to be strongly peat-stained, restricting macrophytes to depths of less than 2m, and as a consequence, macrophytes are restricted to sheltered bays, where a typical Shannon flora occurs. Species present include Intermediate Bladderwort (*Utricularia intermedia*), Pondweeds (*Potamogeton* spp.), Quillwort (*Isoetes lacustris*), Greater Duckweed (*Spirodela polyrrhiza*), Stoneworts (*Chara* spp., including *C. pedunculata*) and Arrowhead (*Sagittaria sagittifolia*). The latter is a scarce species which is almost confined in its occurrence to the Shannon Basin.

Reedbeds of Common Reed (*Phragmites australis*) are an extensive habitat in a number of more sheltered places around the lake, but single-species 'swamps' consisting of such species as Common Club-rush (*Scirpus lacustris*), Slender Sedge (*Carex lasiocarpa*), Saw Sedge (*Cladium mariscus*) and two scarce species of Sedge (*Carex appropinquata* and *C. elata*) also occur in suitable places. Some of these grade up into species-rich calcareous fen with Black Bog-rush (*Schoenus nigricans*) and Whorl-grass (*Catabrosa aquatica*), or freshwater marsh with abundant Water Dock (*Rumex hydrolapathum*) and Hemp-agrimony (*Eupatorium cannabinum*).

Lowland wet grassland is found in abundance around the shore and occurs in two types. One is 'callowland', grassland which floods in winter. This provides feeding for winter waterfowl and breeding waders. The other is an unusual community on stony wet lakeshore all around the lake, and is characterized by Water Germander (*Teucrium scordium*), a scarce plant species almost confined to this lake and Lough Derg.

Dry calcareous grassland occurs scattered around the lake shore. This supports typical species such as Yellow-wort (*Blackstonia perfoliata*), Carlina Thistle (*Carlina vulgaris*) and Quaking Grass (*Briza media*). Orchids also feature in this habitat e.g. Bee Orchid (*Ophrys apifera*) and Common Spotted-orchid (*Dactylorhiza fuchsia*).

Dry, broad-leaved, semi-natural woodland occurs in several places around the lake, most notably at St John's Wood and on Hare Island. St John's Wood is recognised as the largest and most natural

woodland in the Midlands. Its canopy is dominated by Hazel (*Corylus avellana*), Pedunculate Oak (*Quercus robur*), Holly (*Ilex aquifolium*) and Ash (*Fraxinus excelsior*), but a range of other trees and shrubs occur, including Wych Elm (*Ulmus glabra*), Yew (*Taxus baccata*), Wild Cherry (*Prunus avium*) and Irish Whitebeam (*Sorbus hibernica*). The ground flora of St. John's Wood is species-rich, and is remarkable for the presence of two species, Toothwort (*Lathraea squamaria*) and Bird's-nest Orchid (*Neottia nidus-avis*), which tend to occur in sites with a long history of uninterrupted woodland cover. The tree species composition on Hare Island is similar to that in St. John's Wood, with additional non-native species such as Sycamore (*Acer pseudoplatanus*) and Beech (*Fagus sylvatica*). This wood also has an exceptionally rich ground flora. Some of the smaller areas of woodland around Lough Ree are mixed woodland with a high percentage of exotics such as Beech. Some areas of well-developed Hazel scrub also occur.

Pockets of wet woodland occur around the lake: most of these are dominated by Willows (*Salix* spp.), Alder (*Alnus glutinosa*) and Downy Birch (*Betula pubescens*). In one such wood, at Ross Lough, the terrestrial alga, *Trentopohlia* spp., has a specialised niche on the Willow trunks, while the ground layer has a rich bryophyte flora (*Calliergon* spp. and *Sphagnum* spp.), scattered clumps of Greater Tussock-sedge (*Carex paniculata*) and a good diversity of herb species, including Water Dock (*Rumex hydrolapathum*) and Fen Bedstraw (*Galium uliginosum*).

Small examples of raised bog occur, which are of interest in that they show a natural transition through wet woodland and/or swamp to lakeshore habitats. A good example of bog woodland occurs at St. John's Wood. This grows on cutaway peat and is dominated by Birch (*Betula pubescens*) and Alder Buckthorn (*Frangula alnus*). The occurrence of the latter species in such abundance is unusual in Ireland. Other examples of bog woodland occur scattered around the site. Bog woodland is of particular conservation importance and is listed with priority status on the EU Habitats Directive. Smaller lakes occur around the lakeshore, especially on the east side, and these often have the full range of wetland habitats contained within them. A number of small rivers pass through the site.

The site supports a number of rare plant species which are listed in the Irish Red Data Book, Alder Buckthorn (*Frangula alnus*) and Bird Cherry (*Prunus padus*) are woodland components at St. John's Wood and elsewhere. Narrow-leaved Helleborine (*Cephalanthera longifolia*) and Betony (*Stachys officinalis*), which is legally protected under The Flora Protection Order (1987), occur among the ground flora of Hare's Island (where the former occurs in notable abundance) and a number of other woods. The Stonewort (*Chara tomentosa*) is present in shallow water around the lake, and Marsh Pea (*Lathyrus palustris*) occurs on some of the callowland. The rare Myxomycete fungus, *Echinostelium colliculosum*, has been recorded from St John's Wood.

The lake itself contains one of only two populations of the endangered fish species, Pollan (*Coregonus autumnalis*), which is genetically different from Continental European stock. The shrimp (Crustacean) *Mysis relicta* occurs in this lake and is a relict of the glacial period in Ireland.

Small flocks of Greenland White-fronted Goose, an Annex I species on the Birds Directive, use several areas of callowland around the lake in winter. An average spring count of 92 individuals was obtained for this species over the six seasons 1988/89 to 1993/94, indicating that Lough Ree is a nationally important site for this species. The following bird counts are derived from 6 counts during the period 1984/85 to 1986/87. Nationally important populations of Golden Plover (1,350), an Annex I species, Wigeon (1,306), Teal (584), Tufted Duck (1,317) and Coot (798) occur. Other winter visitors are Whooper Swan (32), an Annex I species, Mute Swan (91), Little Grebe (48), Cormorant (91), Mallard (362), Shoveler (40), Pochard (179), Goldeneye (97), Curlew (178), Lapwing (1,751) and Dunlin (48). The callowland is also used by Black-tailed Godwit and others on migration.

Some of the lake islands provide nesting sites for Common Tern, a species listed on Annex I of the European Birds Directive. The Lough Ree colony, 86 pairs in 1995, is estimated as one of the largest of this species on midland lakes. The lake also provides excellent breeding habitat for wildfowl, including Common Scoter (30-40 pairs), a rare breeding species listed as "Endangered" in the Red Data Book, and Tufted Duck (>200 pairs).

The woodlands and scrub around the lake and on the islands are a stronghold of the Garden Warbler (74 territories in 1997), a bird species mainly confined to the Shannon Lakes in Ireland.

There is a population of Otters around the lake. This species is listed in the Red Data Book as being threatened in Europe and is protected under Annex II of the European Habitats Directive.

Landuses within the site include recreation in the form of cruiser hire, angling, camping, picnicking and shooting. Chalet accommodation occurs at a few locations around the lake. Low-intensity grazing occurs on dry and wet grassland around the shore and some hay is made within the site. Some of these activities are damaging, but in a very localised way, and require careful planning. The main threat to the aquatic life in the lake comes from artificial enrichment of the waters by agricultural and domestic waste, and also by peat silt in suspension which is increasingly limiting the light penetration, thus restricting aquatic flora to shallower waters. At present Lough Ree is less affected by eutrophication than L. Derg.

Lough Ree and its adjacent habitats are of major ecological significance. Some of the woodlands around the lake are of excellent quality and include some of the best examples of this habitat in Ireland. St. John's Wood is particularly important; it is considered to be one of the very few candidates for ancient woodland in Ireland. The lake itself is an excellent example of a mesotrophic to moderate-eutrophic system, supporting a rare fish species and a good diversity of breeding and wintering birds.

#### **Garriskil Bog (000679)**

**SITE NAME: Garriskil Bog**

**SITE CODE: 000679**

This raised bog site lies 3 km west of Lough Derravaragh and 3 km east of Rathowen. It is bounded to the southeast and southwest by the rivers Inny and Riffey.

The site has a well developed system of pools and hummocks occupying 25% of the dome. Here, the Bog mosses *Sphagnum imbricatum*, *S. fuscum* and the moss *Leucobryum glaucum* are important components of the hummocks, frequently crowned by the moss *Racomitrium lanuginosum* and sometimes colonised by Bilberry (*Vaccinium myrtillus*). In the pools *Sphagnum* mosses (*S. auriculatum* var. *auriculatum*, *S. cuspidatum*), Great Sundew (*Drosera anglica*), White Beak-sedge (*Rhynchospora alba*) and the liverwort *Cladopodiella fluitans* occur. In between the pools and hummocks "quaking" *Sphagnum* moss carpets support Bog Asphodel (*Narthecium ossifragum*). The area of bog away from this system is drier and more uniformly sedge-rich. In the northwest corner of the site, there is a small wet and quaking area dominated by the moss *Sphagnum cuspidatum* and Common Cottongrass (*Eriophorum angustifolium*) with Soft Rush (*Juncus effusus*), Bog Asphodel and Bottle Sedge (*Carex rostrata*) also present. Along the northeast margin a narrow band of fen-grassland occurs.

Old cutaway bog provides an additional habitat where Purple Moor-grass (*Molinia caerulea*) and Heather (*Calluna vulgaris*) dominate, along with Cottongrasses (*Eriophorum angustifolium* and *E. vaginatum*) while in some parts Downy Birch (*Betula pubescens*) woodland is developing.

On and around the hummocks a rich lichen flora, featuring an abundance of the scarce *Cladonia rangiferina*, has developed. Garriskil Bog is, on occasion, used as a refuge by the Greenland White-fronted Goose flock which winters on the large Co. Westmeath lakes. The site is within a breeding territory of a pair of Merlin. Both of these species are of high conservation importance and are listed on Annex I of the EU Birds Directive. Other birds breeding on the site include Snipe, Curlew and Redshank.

In general, human landuse within the site is low, with much of the previous cutaway areas reverting to semi-natural wilderness. Burning in the past has caused damage, with some bare peat exposure evident in places. This is always a very real threat to a bogland habitat. Past drainage of the bog has unfavourably impacted on the site, although many of these drains have now been infilled and blocked. However, a more serious threat is the arterial drainage of the R. Inny. This could result in major and irreversible damage to the hydrological integrity of this raised bog habitat.

Garriskil bog is a very good example of a relatively intact true Midland raised bog characterised by its typical flora. This habitat is increasingly under threat in Ireland. A remarkable and impressive feature of this site is an extensive and well-developed system of pools and hummocks. Garriskil Bog has one of the best developed pool systems of any remaining raised bog in the country and the site is of unique conservation value.

**Lough Ennell (000685)**

**SITE NAME: Lough Ennell**

**SITE CODE: 000685**

Lough Ennell is a large, open, steep-sided lake, located 3km south of Mullingar, Co. Westmeath. The lake bottom is of limestone with a marl deposit. The water is markedly alkaline and mesotrophic, possibly owing to effluents received from Mullingar town and to fertilizer inputs from farmland surrounding the lake. The River Brosna flows into the lake from the north, at Butler's Bridge, and out from the south.

Lough Ennell supports a diverse aquatic flora; seven Stonewort species have been identified including two Red Data Book species, *Chara denudata* and *C. tomentosa*. Scharff's Char (*Salvinia scharffi*), a distinct race of char which was once found only in Lough Owel and Lough Ennell, is now thought to be extinct. Notable aquatic invertebrates recorded from the lake include *Tinodes maculicornis*, *Metatype fragilis*, *Limnephilus nigriceps* (Trichoptera); *Picromerus bidens*, *Monarthia humili* (Hemiptera) and *Donacia obscura* (Coleoptera).

Much of the lakeshore is rather dry, stony ground, which was formerly part of the lake bed but is now exposed by drainage, and colonised by calcareous grassland. Species such as Mountain Everlasting (*Antennaria dioica*), Hairy Lady's-mantle (*Alchemilla filicaulis* subsp. *vestita*), Frog Orchid (*Coeloglossum viride*), Fairy Flax (*Linum catharticum*) and Yellow-wort (*Blackstonia perfoliata*) occur here. Alkaline fen, a habitat listed on Annex I of the EU Habitats Directive, is also found on the lake shore with species such as Grass-of-parnassus (*Parnassia palustris*), Marsh Pennywort (*Hydrocotyle vulgaris*) and Bottle Sedge (*Carex rostrata*). In wet marshy patches along the shore Marsh-marigold (*Caltha palustris*), Brookweed (*Samolus valerandi*) and Lesser Water-plantain (*Baldellia ranunculoides*) are common.

Reedbeds and species-poor swamp vegetation occasionally fringe the lake, particularly around the points of inflow and outflow and on the eastern shore, around Tudenham Park. Common Reed (*Phragmites australis*) is abundant here. Water-plantain (*Alisma plantago-aquatica*), Cowbane (*Cicuta virosa*), Frogbit (*Hydrocharis morsus-ranae*) and Tufted Sedge (*Carex elata*) also occur. The latter two species are of note in that they are of occasional in the eastern midlands but are rarely recorded elsewhere. The rare Fibrous Tussock-sedge (*Carex appropinquata*) has been recorded here also. This species has a disjunct distribution, being recorded only from Co. Clare and from two midland counties (Westmeath and Offaly).

Mixed woodland of Beech (*Fagus sylvatica*), Ash (*Fraxinus excelsior*) and Downy Birch (*Betula pubescens*) fringes the lakeshore to the northwest. Bluebell (*Hyacinthoides non-scripta*) and Lords-and-ladies (*Arum maculatum*) are among the woodland ground flora.

A species of blue-green alga (*Schizothrix fasciculata*), which forms little pebbles of lime that are cast up on the lakeshore, occurs in Lough Ennell and has not been recorded from anywhere else in Ireland.

Yellow Archangel (*Lamiastrum galeobdolon*), a rare plant listed in the Red Data Book, has been recorded in the woods along the eastern shores of Lough Ennell. This is the only record for this species outside the south-east of Ireland. The rare Myxomycete fungus, *Licea castanea*, has been recorded from woodland in the site.

This site shares an internationally important Greenland White-fronted Goose flock with Loughs Iron, Glen and Owel. The numbers of Geese which visit Lough Ennell are lower than for the other lakes: 91

birds (3 year average peak). Nationally important bird populations which have been recorded on Lough Ennell are: Cormorant (average peak 149; absolute maximum 448); Mute Swan (average peak 424); Pochard (average peak 889; maximum 2,600 on 8/11/85); Tufted Duck (average peak 720) and Coot (average peak 639). All of these data were compiled from counts made over 3 seasons, 1984/85 - 1986/87. A single count of 522 Golden Plover was obtained in that period, i.e. a regionally important population.

Lough Ennell is an important amenity area, much used for fishing, boating and camping. Sections of the shoreline are managed for visitor access and amenity. The chemical composition of effluent from the Mullingar sewage treatment plant has a significant impact on the water quality of Lough Ennell. The mid-1970s saw the introduction of treatment of the sewage to reduce phosphates, with a resulting improvement in water quality (according to data compiled during 1987-90). However, levels of planktonic algal growth in the lake water continue to fluctuate, in response to the variable efficiency of the phosphate removal facility at the sewage treatment plant and the re-mobilization of phosphate from the lake sediments.

Lough Ennell is of significance as a highly productive lake which supports a rich variety of lower plant and invertebrate species. Its lakeshore habitats, which include alkaline fen, a habitat listed on Annex I of the EU Habitats Directive, support a diverse flora. These habitats also provide important refuges for wildfowl.

#### **Lough Owel (000688)**

**SITE NAME: Lough Owel**

**SITE CODE: 000688**

Lough Owel is a large hard water lake, a habitat listed on Annex I of the EU Habitats Directive. The lake is located approximately 4km north-west of Mullingar. It is a relatively shallow lake with a rocky, marl-covered bottom. Submerged vegetation includes a number of Stoneworts, notably *C. rudis* and *C. tomentosa*. The rocky nature of the shoreline has given rise to marginal vegetation which is patchy and sparse. Apart from some reedswamp formed by Common Reed (*Phragmites australis*) and Common Clubrush (*Scirpus lacustris*), shoreline vegetation is dominated by occasional patches of Alder (*Alnus glutinosa*).

There are, however, areas of marsh and fen in the northern and south-western corners of the lake. These areas (Bunbrosna marsh and Tullaghan fen) were formerly separate Areas of Scientific Interest but have now been included within the Lough Owel site. Bunbrosna is an area of marsh and fen which is partially invaded by Downy Birch (*Betula pubescens*) and Willows (*Salix* spp.). The area contains some rare plant species, namely Marsh Pea (*Lathyrus palustris*), Marsh Fern (*Thelypteris palustris*) and the protected Round-leaved Wintergreen (*Pyrola rotundifolia*). In addition, four other rare plant species are found along the lake margins namely, White Sedge (*Carex curta*), Fibrous Tussock-sedge (*Carex appropinquata*), Marsh Stitchwort (*Stellaria palustris*) and Frogbit (*Hydrocharis morsus-ranae*). Tullaghan fen is an area of flooded cut-over bog which has developed a varied fen and marsh vegetation quite similar to Bunbrosna marsh. Bog-sedge (*Carex limosa*), Tussock-sedge and Marsh Fern are to be found here.

Although Lough Owel is not noted for its wildfowl, there are small populations of Mallard, Shoveler, Pochard and Tufted Duck present. Farmland adjacent to the lake provides feeding grounds for internationally important numbers of Greenland White-fronted Goose. Lough Owel is one of the most important fishing lakes in the midlands and is especially good for Trout. Scharff's Char (*Salvelinus scharffi*), a distinct race of char which was once found only in Lough Owel and Lough Ennell, is now thought to be extinct. Notable invertebrates recorded from the lake include three caddis fly species: *Tinodes maculicornis*, *Metatype fragilis* and *Limnephilus nigriceps* (Trichoptera).

With the exception of Lough Carra in County Mayo, Lough Owel is the best example of a large, spring-fed calcareous lake in the country. The site is of major conservation significance, containing, as it does, three habitats that are listed on Annex I of the EU Habitats Directive, i.e. alkaline fens, transition mires

and hard water lakes. Additionally, the site supports bird populations of conservation significance. Potential threats to the conservation interest of the lake include the increasing level of water supply to Mullingar, overfishing, eutrophication caused by local farming practices and pressure from amenity uses such as boating and fishing.

### **Scragh Bog (000692)**

**SITE NAME: Scragh Bog**

**SITE CODE: 000692**

Scragh Bog lies approximately 10 km northwest of Mullingar, Co. Westmeath. This site comprises a wet transition fen with a floating root mat which has developed in a small oval-shaped depression. The fen is fed by weak surface springs and drains by an artificially defined outlet.

The main habitat on the site corresponds to calcareous fen, a habitat listed on Annex I of the EU Habitats Directive, while transition mire, another Annex I habitat is also present. The fen becomes open carr in the central area and in places grades into ombrotrophic bog.

Most of the fen vegetation belongs to two broad types. The first is dominated by Black Bog-rush (*Schoenus nigricans*), with Long-stalked Yellow-sedge (*Carex lepidocarpa*), Narrow-leaved Marsh-orchid (*Dactylorhiza traunsteineri*), Marsh Arrowgrass (*Triglochin palustris*), Grass-of-parnassus (*Parnassia palustris*) and the following mosses: *Campylium stellatum*, *Scorpidium scorpioides* and *Drepanocladus revolvens*. The second type is quaking fen in which Slender Sedge (*Carex lasiocarpa*) is dominant and is associated with Bogbean (*Menyanthes trifoliata*), Water Horsetail (*Equisetum fluviatile*), Long-stalked Yellow-sedge and the moss species *Drepanocladus revolvens*, *Bryum pseudotriquetrum* and *Cinclidium stygium*. Slender Cottongrass (*Eriophorum gracile*), a protected species which is also rare in Europe, occurs in this vegetation type. A third category of fen vegetation is dominated by large sedges, such as Fibrous Tussock-sedge (*Carex appropinquata*).

The fen carr is dominated by Willows (*Salix* spp.), including the rare Grey Willow (*Salix cinerea* subsp. *cinerea*) and by Downy Birch (*Betula pubescens*). Round-leaved Wintergreen (*Pyrola rotundifolia*), another Red Data Book species, is found in this vegetation type. Other rare plants found at the site include *Drepanocladus vernicosus*, a moss listed on Annex II of the EU Habitats Directive, and the arctic-alpine moss *Homalothecium nitens*.

The embryonic raised bog communities contain such species as Bog-sedge (*Carex limosa*), Slender Sedge, Cross-leaved Heath (*Erica tetralix*), Round-leaved Sundew (*Drosera rotundifolia*), Cranberry (*Vaccinium oxycoccos*), and a number of mosses, such as *Aulacomnium palustre*, *Sphagnum plumulosum* and *Sphagnum contortum*.

The remaining terrestrial vegetation types (apart from some planted coniferous forestry at the southern end) are two grassland communities: the first is a tall meadow community in which Meadowsweet (*Filipendula ulmaria*) is dominant; the second is characterised by Purple Moor-grass (*Molinia caerulea*) and Devil's-bit Scabious (*Succisa pratensis*).

Two aquatic communities are also found: one is free-floating, in which Common Duckweed (*Lemna minor*) is prominent; and the other is a submerged community of Stoneworts (*Chara* spp.).

The site also supports a uniquely complete fauna of transition mire invertebrates, including a number of species which are extremely rare in Northern Europe. Among the aquatic/subaquatic insects, *Chrysops sepulchralis* (Diptera), *Tetanocera freyi* (Diptera) and *Coenagrion lunulatum* (Odonata) provide examples of rare Northern European species. Two other flies *Acrometopia wahlbergi* and *Platycheirus perpallidus* (Diptera) are rare species more closely associated with mire vegetation. The fen carr also has its own complement of associated invertebrates of scientific interest. Three flightless beetles (Coleoptera), which are indicative of very old wetlands, have also been identified from Scragh Bog - *Hydroporus glabriusculus*, *H. scalesianus* and *Laccornis oblongus*.

Scragh Bog supports a population of Marsh Fritillary butterfly (*Euphydryas aurinia*). This scarce species is of high conservation value and is listed on Annex II of the EU Habitats Directive.

Most of the site is managed as a Nature Reserve. The outflow stream is included in the site, since interference with this outflow could damage the site hydrology. A small section at the bottom of a field to the south is also included - this area supports a species-rich marsh/wet grassland vegetation. As well as being vulnerable to interference with its hydrology, Scragh Bog is also susceptible to eutrophication as a result of agricultural run-off from the surrounding land.

Scragh Bog contains excellent examples of two habitats listed on Annex I of the EU Habitats Directive - alkaline fen and transition mire. These habitats support a number of rare plants, notably *Drepanocladus vernicosus*, and also play host to a well developed invertebrate fauna.

### **White Lough, Ben Loughs & Lough Doo (001810)**

**SITE NAME: White Lough, Ben Loughs & Lough Doo**

**SITE CODE: 001810**

This site is comprised of four hard water lakes, a habitat listed on Annex I of the EU Habitats Directive, in a small, poorly-drained valley, 4 km east of Castlepollard, Co. Westmeath.

A curious feature of the site is the contrast between Lough Doo and the other loughs. Although they are in close proximity and are connected by a ditch, Lough Doo has a very limited aquatic and marginal flora while all the rest are colonised by a wide, dense fringe of Great Fen-sedge (*Cladium mariscus*) swamp.

The bottom of Doo Lough is covered by an unusually extensive mat of stonewort species (*Chara* spp.) with a few sparse stands of Common Reed (*Phragmites australis*). The calcium-rich water has deposited marl on the lake bed and over the stoneworts themselves. The presence of stoneworts in such abundance is significant as many of these species are threatened by loss of habitat or by pollution.

Areas of wet woodland dominated by willows (*Salix* spp.) fringe some of the lakes, and elsewhere wet grassland and freshwater marsh occur. In places peat formation and acidification is indicated by the presence of heath species. Some of the steeper slopes around the lakes are covered with scrub or small areas of broadleaf woodland.

The White-clawed Crayfish (*Austropotamobius pallipes*), a species listed on Annex II of the EU Habitats Directive and protected under the 1976 Wildlife Act, has been recorded from these lakes.

This site is of considerable conservation significance for its hard water lakes and for the occurrence of White-clawed Crayfish. The variety of habitats within this valley and the contrasting vegetation types add further to its interest.

### **Split Hills & Long Hills Esker (001831)**

**SITE NAME: Split Hills & Long Hills Esker**

**SITE CODE: 001831**

Split Hills and Long Hill Esker is a 5km long site which crosses the main Galway-Dublin road mid-way between Kilbeggan and Tyrrellspass in Co. Westmeath. It is a very prominent feature on the local landscape and the best example of an esker in Ireland.

The main habitat is of semi-natural woodland dominated by Hazel (*Corylus avellana*), Ash (*Fraxinus excelsior*), and Hawthorn (*Crataegus monogyna*). Oak (*Quercus robur*), Wych Elm (*Ulmus glabra*) and Irish Whitebeam (*Sorbus hibernica*) are important constituents. There are very fine examples of these trees throughout the site: some Hazel trees, in particular, are impressive. The ground flora is species-rich and includes Primrose (*Primula vulgaris*), Enchanter's Nightshade (*Circaea lutetiana*), Golden Saxifrage (*Chrysosplenium oppositifolium*), Bluebell (*Hyacinthoides non-scripta*), Ground Ivy (*Glechoma*



hederacea), Sanicle (*Sanicula europaea*) and other typical woodland plants. The scarce woodland grass, Wood Fescue (*Festuca altissima*), is present, and the scarce Bird's-nest Orchid (*Neottia nidus-avis*) has also been recorded here. The presence of Wych Elm is interesting in view of its decline due to Dutch Elm Disease.

Several areas of species-rich calcareous grassland occur, with typical calcicole species such as Yellow-wort (*Blackstonia perfoliata*), Carline Thistle (*Carlina vulgaris*), Mountain Everlasting (*Antennaria dioica*) and Early-purple Orchid (*Orchis mascula*). These occur on unstable old and active quarry faces, and on cleared woodland areas. Areas of scrub with Blackthorn (*Prunus spinosa*) and Gorse (*Ulex europaeus*) occur, and regenerating Hazel (*Corylus avellana*) scrub exists in some areas where woodland has been cleared. Other habitats in the site include a small lake and freshwater marsh with Slender Sedge (*Carex lasiocarpa*).

Narrow-leaved Bittercress (*Cardamine impatiens*) occurs among the woodland flora at this site. It is an annual or biennial, whose populations are known to 'disappear' in some years only to 'reappear' again. The species is protected under The Flora Protection Order (1999), and this is its only known location in Ireland. Another protected species, Hemp Nettle (*Galeopsis angustifolia*), occurs on more open ground on the esker.

The main threat to the esker is quarrying for sand and gravel: this activity already occurs on the site at several locations. Grazing is a critical factor affecting esker habitats. The presence of too many grazers causes damage to the ground vegetation in both woodlands and grasslands and prevents regeneration of woody species. If the grazing level is too low, grasslands are vulnerable to the encroachment of scrub at the expense of species which require open conditions. Fertiliser application, associated with agricultural improvement, also leads to a reduction in species-richness of grasslands.

Split Hill and Long Hill Esker is one of the finest and longest wooded eskers in the country, one of the very few woodlands in the area and a fine geomorphological feature of great scenic value. The trees are particularly well-grown and impressive and much of the woodland has developed naturally on its steep slopes. The presence of a very species-rich ground flora which includes a rare and legally protected plant, at its only known Irish location, makes this site of great botanical and ecological importance. The site also supports some excellent examples of calcareous grassland which is rich in orchids. The increasing rarity of this habitat (due to agricultural intensification) is recognised in that it is awarded priority status on Annex I of the European Habitats Directive.

### **Lough Bane & Lough Glass (002120)**

**SITE NAME: Lough Bane & Lough Glass**

**SITE CODE: 002120**

This site is located on the Meath/Westmeath border, about 10 km south of Oldcastle. It comprises three lakes situated in a shallow valley. Lough Bane is by far the largest of the group, with the much smaller Lough Glass occurring immediately to the east and Lough Glass North to the north-west. The lakes occur at the headwaters of the River Deel, with the main outflow at the south-east end of Lough Bane. The outflow is not very substantial and partly overgrown with vegetation. The connection between Lough Glass and Lough Bane has now been severed and the flow from Glass is diverted to the south-west. The water level has dropped over the years and has exposed soft marl along parts of the shore.

Lough Bane is a good example of a hard water marl lake with well developed stonewort (*Chara* spp.) communities. This is an important habitat listed on Annex I of the E.U. Habitats Directive. Sampling of the aquatic flora has shown the presence in Lough Bane of at least four species of Charophyte, i.e. *Chara rudis* (dominant in deep water), *C. curta* (shallow water at north shore), *C. globularis* and *C. contraria* (both mid-south shore).

Much of the shoreline of the lakes has a fringe of wetland vegetation, mostly Common Reed (*Phragmites australis*) and Common Club-rush (*Scirpus lacustris*), but also some Water Horsetail (*Equisetum fluviatile*) and Bottle Sedge (*Carex rostrata*). At the east and west ends of Lough Bane the

swamp vegetation is particularly well developed and there is also fen vegetation. Species include Jointed Rush (*Juncus articulatus*), Water-cress (*Nasturtium officinale*), Meadowsweet (*Filipendula ulmaria*), Devils'-bit Scabious (*Succisa pratensis*), Meadow Thistle (*Cirsium dissectum*), Marsh Bedstraw (*Galium palustre*) and Grass-of-parnassus (*Parnassia palustris*).

Mixed woodland occurs along parts of the south and north shores. Species present include Beech (*Fagus sylvatica*), Oak (*Quercus* sp.), Holly (*Ilex aquifolium*), Scots Pine (*Pinus sylvestris*) and European Larch (*Larix decidua*). In some areas Hazel (*Corylus avellana*) becomes dominant, along with other shrubby species such as Hawthorn (*Crataegus monogyna*).

Dry calcareous grassland (mostly unimproved) is found in a few areas, notably at Noggin Hill. Species present here include Primrose (*Primula vulgaris*), Fairy Flax (*Linum catharticum*), Lady's Bedstraw (*Galium verum*), Ribwort Plantain (*Plantago lanceolata*) and the grasses *Briza media* and *Cynosurus cristatus*.

The lake has Brown Trout and is an important angling lake. An important population of White-clawed Crayfish (*Austropotamobius pallipes*), a species listed on Annex II of the E.U. Habitats Directive, was known from these lakes, but it was wiped out by a fungal plague (*Aphanomyces astaci*) in the 1980s. Crayfish have successfully been re-introduced to other lakes in the area and National Parks and Wildlife intend to re-introduce them to Lough Bane. The lakes and fringing wetlands also support a varied avifauna including Little Grebe, Cormorant, Lapwing, Curlew and Snipe.

Despite being surrounded by mostly improved pasture, the quality of the water appears good and Lough Bane has been classified as a very oligotrophic system. However, as it is a small waterbody and situated in a valley, it is vulnerable to water pollution. A further threat comes from afforestation within the catchment - should there be an increase in the areas under commercial forestry, the quality of the water could be affected.

Overall, this is a fine example of a hard water marl lake system with good *Chara* communities. Such systems are becoming scarce in Europe.

### **Lough Lene (002121)**

**SITE NAME:** Lough Lene

**SITE CODE:** 002121

This lake is situated 4km north east of Castlepollard in Co. Westmeath. It is a deep (20m max.), clear hard-water lake with marl deposition (especially noticeable on the margins).

The lake supports a range of pondweeds (including *Potamogeton perfoliatus* and *P. lucens*), Canadian Pondweed (*Elodea canadensis*) and a variety of stoneworts (*Chara* spp.), such as *C. pedunculata* and *C. curta* which are marl or hard water lake indicators. A stony shore fringes much of the lake - here species such as spike-rush (*Eleocharis* sp.), Jointed Rush (*Juncus articulatus*), Shoreweed (*Littorella uniflora*), Redshank (*Polygonum persicaria*), Marsh Pennywort (*Hydrocotyle vulgaris*) and sedges (*Carex* spp.) are found. A narrow fringe of emergent plant species dominated by Common Reed (*Phragmites australis*) and Common club-rush (*Schoenoplectus lacustris*) occurs along some areas of the lakeshore.

Patches of wet woodland colonise former areas of cut-away and other low-lying areas close to the lake and are dominated by willows (*Salix* spp.), birch (*Betula* sp.) and Alder (*Alnus glutinosa*) with patches of Common Reed also occurring. These areas support a rich ground flora. The ground flora of the wood at the north-western end of the site supports a range of Sphagnum mosses, Bilberry (*Vaccinium myrtillus*) and Heather (*Calluna vulgaris*). Alder carr occurs on the spur of land jutting into the lake at its north-western end.

Freshwater marsh/fen vegetation, with such species as Purple Moor-grass (*Molinia caerulea*), Bottle Sedge (*Carex rostrata*), Black Bog-rush (*Schoenus nigricans*), and Marsh Cinquefoil (*Potentilla palustris*), occurs in some areas by the lake.

Bird species using the site include Mute Swan, Teal, Pochard, Great-crested Grebe, Little Grebe, Tufted Duck, Grey Heron, Water Rail, Mallard, Golden Eye, Cormorant and Wigeon. The surrounding lands are used by Snipe, Lapwing and Curlew. Of particular significance is the Pochard population which, in the winters 1995/96 and 1996/97, was of national importance (average max. 515 individuals).

Much of the lakeshore is accessible to grazing cattle and the surrounding fields have been heavily improved. The stoneworts may become gradually displaced as the principal primary producers by phytoplankton or vascular plants if this and other such hard-water lakes become artificially enriched with nutrients. Unpolluted hard-water lakes such as Lough Lene are becoming increasingly rare in Ireland and in Europe and are of a type that is listed on Annex I of the E.U. Habitats Directive.

Lough Lene had a notable population of Freshwater Crayfish, a species that is listed on Annex II of the E.U. Habitats Directive, but this species disappeared from the site in 1987 following an outbreak of crayfish fungus plague. A re-introduction programme for this species at the site began shortly after this date - this has been most successful, with breeding being recorded during a survey in 1995.

### **River Boyne & River Blackwater (002299)**

**SITE NAME: River Boyne & River Blackwater**

**SITE CODE: 002299**

This site comprises the freshwater element of the River Boyne as far as the Boyne Aqueduct, the Blackwater as far as Lough Ramor and the Boyne tributaries including the Deel, Stoneyford and Tremblestown Rivers. These riverine stretches drain a considerable area of Meath and Westmeath and smaller areas of Cavan and Louth. The underlying geology is Carboniferous Limestone for the most part with areas of Upper, Lower and Middle well represented. In the vicinity of Kells Silurian Quartzite is present while close to Trim are Carboniferous Shales and Sandstones. There are many large towns adjacent to but not within the site. Towns both small and large, include Slane, Navan, Kells, Trim, Athboy and Ballivor.

The site is a candidate SAC selected for alkaline fen and alluvial woodlands, both habitats listed on Annex I of the E.U. Habitats Directive. The site is also selected for the following species listed on Annex II of the same directive - Atlantic Salmon, Otter and River Lamprey.

The main areas of alkaline fen are concentrated in the vicinity of Lough Shesk, Freehan Lough and Newtown Lough. The hummocky nature of the local terrain produces frequent springs and seepages which are rich in lime. A series of base-rich marshes have developed in the poorly-drained hollows, generally linked with these three lakes. Open water is usually fringed by Bulrush (*Typha latifolia*), Common Club-rush (*Scirpus lacustris*) or Common Reed (*Phragmites australis*) and this last species also extends shorewards where a dense stand of Great Fen Sedge or Saw Sedge (*Cladium mariscus*) frequently occurs. This in turn grades into a sedge and grass community (*Carex* spp., *Molinia caerulea*) or one dominated by the Black Bog-rush (*Schoenus nigricans*). An alternative direction for the aquatic/terrestrial transition to take is through a floating layer of vegetation. This is normally based on Bogbean (*Menyanthes trifoliata*) and Marsh cinquefoil (*Potentilla palustris*). Other species gradually become established on this cover, especially plants tolerant of low nutrient status e.g. bog mosses (*Sphagnum* spp.). Diversity of plant and animal life is high in the fen and the flora, includes many rarities. The plants of interest include Narrow-leaved Marsh Orchid (*Dactylorhiza traunsteineri*), Fen Bedstraw (*Galium uliginosum*), Cowbane (*Cicuta virosa*), Frogbit (*Hydrocharis morsus-ranae*) and Least Bur-reed (*Sparganium minimum*). These species tend to be restricted in their distribution in Ireland. Also notable is the abundance of aquatic Stoneworts (*Chara* spp.) which are characteristic of calcareous wetlands.

The rare plant, Round-leaved Wintergreen (*Pyrola rotundifolia*) occurs around Newtown Lough. This species is listed in the Red Data Book and is protected under the Flora Protection Order, 1999, and this site is its only occurrence in Co. Meath.

Wet woodland fringes many stretches of the Boyne. The Boyne River Islands are a small chain of three islands situated 2.5 km west of Drogheda. The islands were formed by the build up of alluvial sediment in this part of the river where water movement is sluggish. All of the islands are covered by dense thickets of wet, Willow (*Salix* spp.) woodland, with the following species occurring: Osier (*S. viminalis*), Crack Willow (*S. fragilis*), White Willow (*S. alba*), Purple Willow (*Salix purpurea*) and Grey Willow (*S. cinerea*). A small area of Alder (*Alnus glutinosa*) woodland is found on soft ground at the edge of the canal in the north-western section of the islands. Along other stretches of the rivers of the site Grey Willow scrub and pockets of wet woodland dominated by Alder have become established, particularly at the river edge of mature deciduous woodland. Ash (*Fraxinus excelsior*) and Birch (*Betula pubescens*) are common in the latter and the ground flora is typical of wet woodland with Meadowsweet (*Filipendula ulmaria*), Angelica (*Angelica sylvestris*), Yellow Iris, Horsetail (*Equisetum* spp.) and occasional tussocks of Greater Tussock-sedge (*Carex paniculata*).

The dominant habitat along the edges of the river is freshwater marsh - the following plant species occur commonly here: Yellow Flag (*Iris pseudacorus*), Creeping Bent (*Agrostis stolonifera*), Canary Reed-grass (*Phalaris arundinacea*), Marsh Bedstraw (*Galium palustre*), Water Mint (*Mentha aquatica*) and Water Forget-me-not (*Myosotis scorpioides*). In the wetter areas of the marsh Common Meadow-rue (*Thalictrum flavum*) is found. In the vicinity of Dowth, Fen Bedstraw (*Galium uliginosum*), a scarce species mainly confined to marshy areas in the midlands, is common in this vegetation. Swamp Meadow-grass (*Poa palustris*) is an introduced plant which has spread into the wild (naturalised) along the Boyne approximately 5 km south-west of Slane. It is a rare species which is listed in the Red Data Book and has been recorded among freshwater marsh vegetation on the banks of the Boyne in this site. The only other record for this species in the Republic is from a site in Co. Monaghan.

The secondary habitat associated with the marsh is wet grassland and species such as Tall Fescue (*Festuca arundinacea*), Silverweed (*Potentilla anserina*), Creeping Buttercup (*Ranunculus repens*), Meadowsweet (*Filipendula ulmaria*) and Meadow Vetchling (*Lathyrus pratensis*) are well represented. Strawberry Clover (*Trifolium fragiferum*), a plant generally restricted to coastal locations in Ireland, has been recorded from wet grassland vegetation at Trim. At Rossnaree river bank on the River Boyne, is Round-Fruited Rush (*Juncus compressus*) found in alluvial pasture, which is generally periodically flooded during the winter months. This rare plant is only found in three counties in Ireland.

Along much of the Boyne and along tributary stretches are areas of mature deciduous woodland on the steeper slopes above the floodplain marsh or wet woodland vegetation. Many of these are planted in origin. However the steeper areas of King Williams Glen and Townley Hall wood have been left unmanaged and now have a more natural character. East of Curley Hole the woodland has a natural appearance with few conifers. Broad-leaved species include Oak (*Quercus* spp.), Ash (*Fraxinus excelsior*), Willows, Hazel (*Corylus avellana*), Sycamore (*Acer pseudoplatanus*), Holly (*Ilex aquifolium*), Horse chestnut (*Aesculus* sp.) and the shrubs Hawthorn (*Crataegus monogyna*), Blackthorn (*Prunus spinosa*) and Elder (*Sambucus nigra*). South-west of Slane and in Dowth, the addition of some more exotic tree species such as Wych Elm (*Ulmus glabra*), Beech (*Fagus sylvatica*), and occasionally Lime (*Tilia cordata*), are seen. Coniferous trees, Larch (*Larix* sp.) and Scots Pine (*Pinus sylvestris*) also occur. The woodland ground flora includes Barren Strawberry (*Potentilla sterilis*), Enchanter's Nightshade (*Circaea lutetiana*) and Ground-ivy (*Glechoma hederacea*), along with a range of ferns. Variation occurs in the composition of the canopy, for example, in wet patches alongside the river, White Willow and Alder form the canopy.

Other habitats present along the Boyne and Blackwater include lowland dry grassland, improved grassland, reedswamp, weedy wasteground areas, scrub, hedge, drainage ditches and canal. In the vicinity of Lough Shesk, the dry slopes of the morainic hummocks support grassland vegetation which, in some places, is partially colonised by Gorse (*Ulex europaeus*) scrub. Those grasslands which remain unimproved for pasture are species-rich with Common Knapweed (*Centaurea nigra*), Creeping Thistle (*Cirsium arvense*) and Ribwort Plantain (*Plantago lanceolata*) commonly present. Fringing the canal alongside the Boyne south-west of Slane, are Reed Sweet-grass (*Glyceria maxima*), Great Willowherb (*Epilobium hirsutum*) and Meadowsweet.

The Boyne and its tributaries is one of Ireland's premier game fisheries and it offers a wide range of

angling from fishing for spring salmon and grilse to seatrout fishing and extensive brown trout fishing. Atlantic Salmon (*Salmo salar*) use the tributaries and headwaters as spawning grounds. Although this species is still fished commercially in Ireland, it is considered to be endangered or locally threatened elsewhere in Europe and is listed on Annex II of the Habitats Directive. Atlantic Salmon run the Boyne almost every month of the year. The Boyne is most important as it represents an eastern river which holds large three-sea-winter fish from 20 -30 lb. These fish generally arrive in February with smaller spring fish (10 lb) arriving in April/May. The grilse come in July, water permitting. The river gets a further run of fish in late August and this run would appear to last well after the fishing season. The salmon fishing season lasts from 1st March to 30th September.

The Blackwater is a medium sized limestone river which is still recovering from the effects of the arterial drainage scheme of the 70's. Salmon stocks have not recovered to the numbers pre drainage. The Deel, Riverstown, Stoneyford and Tremblestown Rivers are all spring fed with a continuous high volume of water. They are difficult to fish in that some are overgrown while others have been affected by drainage with the resulting high banks.

The site is also important for the populations of two other species listed on Annex II of the E.U. Habitats Directive, namely River Lamprey (*Lampetra fluviatilis*) which is present in the lower reaches of the Boyne River while the Otter (*Lutra lutra*) can be found throughout the site. In addition, the site also supports many more of the mammal species occurring in Ireland. Those which are listed in the Irish Red Data Book include Pine Marten, Badger and Irish Hare. Common Frog, another Red Data Book species, also occurs within the site. All of these animals with the addition of the Stoat and Red Squirrel, which also occur within the site, are protected under the Wildlife Act.

Whooper Swans winter regularly at several locations along the Boyne and Blackwater Rivers. Parts of these areas are within the cSAC site. Known sites are at Newgrange (c. 20 in recent winters), near Slane (20+ in recent winters), Wilkinstown (several records of 100+) and River Blackwater from Kells to Navan (104 at Kells in winter 1996/97, 182 at Headfort in winter 1997/98, 200-300 in winter 1999/00). The available information indicates that there is a regular wintering population of Whooper Swans based along the Boyne and Blackwater River valleys. The birds use a range of feeding sites but roosting sites are not well known. The population is substantial, certainly of national, and at times international, importance. Numbers are probably in the low hundreds.

Intensive agriculture is the main landuse along the site. Much of the grassland is in very large fields and is improved. Silage harvesting is carried out. The spreading of slurry and fertiliser poses a threat to the water quality of this salmonid river and to the lakes. In the more extensive agricultural areas sheep grazing is carried out.

Fishing is a main tourist attraction on the Boyne and Blackwater and there are a number of Angler Associations, some with a number of beats. Fishing stands and styles have been erected in places. The Eastern Regional Fishery Board have erected fencing along selected stretches of the river as part of their salmonid enhancement programme. Parts of the river system have been arterially dredged. In 1969 an arterial dredging scheme commenced and disrupted angling for 18 years. The dredging altered the character of the river completely and resulted in many cases in leaving very high banks. The main channel from Drogheda upstream to Navan was left untouched, as were a few stretches on the Blackwater. Ongoing maintenance dredging is carried out along stretches of the river system where the gradient is low. This is extremely destructive to salmonid habitat in the area. Drainage of the adjacent river systems also impacts on the many small wetland areas throughout the site. The River Boyne is a designated Salmonid Water under the EU Freshwater Fish Directive.

The site supports populations of several species listed on Annex II of the EU Habitats Directive, and habitats listed on Annex I of this directive, as well as examples of other important habitats. Although the wet woodland areas appear small there are few similar examples of this type of alluvial wet woodland remaining in the country, particularly in the north-east. The semi-natural habitats, particularly the strips of woodland which extend along the river banks and the marsh and wet grasslands, increase the overall habitat diversity and add to the ecological value of the site as does the presence of a range of Red Data

Book plant and animal species and the presence of nationally rare plant species.

### **Ballymore Fen (002313)**

**SITE NAME: Ballymore Fen**

**SITE CODE: 002313**

Ballymore Fen lies approximately 17 km west of Mullingar adjacent to the Mullingar to Ballymore road (R390) in Co. Westmeath. The geology of the area is Carboniferous Limestone. The site occupies a relatively wide and deep depression in the surrounding drift which is fed on both the east and west by springs. The area may at one stage have been a lake of some size but at present is occupied by a transition mire complex with the characteristic lagg fen at the edges.

The site is a candidate SAC selected for transition mires, a habitat listed on Annex I of the E.U. Habitats Directive.

In the wetter areas towards the centre and south of the site the vegetation is characterised by a scraw typified by patches with an abundance of Bogbean (*Menyanthes trifoliata*) and Water Horsetail (*Equisetum fluviatile*). Other associated plants include Marsh Helleborine (*Epipactis palustris*), Water Mint (*Mentha aquatica*), Marsh Cinquefoil (*Potentilla palustris*), Marsh Bedstraw (*Galium palustre*), Angelica (*Angelica sylvestris*), Lesser Spearwort (*Ranunculus flammula*) and sedges (*Carex* spp.). In slightly drier areas and on old banks are Willow (*Salix*) saplings, with occasional Ash (*Fraxinus excelsior*) and ferns such as Regal Fern (*Osmunda regalis*) and Broad Buckler-fern (*Dryopteris dilatata*). Where there is flowing water Lesser Water-parsnip (*Berula erecta*) is present.

At the edge of the wetter area, particularly at the east of the site, is a gradation to Black Bog-rush (*Schoenus nigricans*) dominated fen area. Throughout are Willow saplings with some Purple Moor-grass (*Molinia caerulea*) and bog moss hummocks (*Sphagnum* spp.). Between the hummocks, abundant Round-leaved Wintergreen (*Pyrola rotundifolia*) - a Red Data Book Species, occurs with species typically found in such conditions. The bryophyte communities are of considerable interest.

On the slopes surrounding the fen area is a mosaic of improved, semi-improved and species-rich calcareous grasslands lightly grazed by cattle. Plant species present on the slopes at the east include Common Spotted-orchid (*Dactylorhiza fuchsii*), Quaking Grass (*Briza media*), Knapweed (*Centaurea nigra*), Oxeye Daisy (*Leucanthemum vulgare*), Crested Hair-grass (*Koeleria macrantha*), Common Bird's-foot-trefoil (*Lotus corniculatus*), Ribwort Plantain (*Plantago lanceolata*) and Cat's-ear (*Hypochoeris radicata*).

Associated with drains and flowing streams throughout the site are the 10-spined stickleback along with the common frog and smooth newt. Five species of dragonfly and damselfly were recorded on the wing: Brown Hawker (*Aeshna grandis*), Common Hawker (*Aeshna juncea*), Keeled Skimmer (*Orthethrum coerulescens*), Azure damselfly (*Coenagrion puella*) and Variable damselfly (*Coenagrion pulchellum*).

Parts of the site have been cut for turf in the past, as evidenced by parallel heather covered ridges and banks. Peat cutting has not occurred for a long time - confirmed by a local landowner. Regeneration of vegetation is occurring in these areas and the ground underfoot is very wet and soft.

Ballymore Fen is interesting due to the overall variety of habitats and species in a relatively small area and to the richness of the transition mire/scraw which is enhanced by the presence of the Red Data Book Species Round-leaved Wintergreen.

### **Carn Park Bog (002336)**

**SITE NAME: Carn Park Bog**

**SITE CODE: 002336**

Carn Park Bog is situated 8 km east of Athlone, in the townlands of Tullywood, Carn Park,

Cappaghbrack, Warren High and Moydrum, Co. Westmeath. The site comprises a raised bog that includes both areas of high bog and cutover bog. The margins of the site are bounded by roads on the north, west and southern margins and forestry on the east.

The site is a candidate Special Area of Conservation selected for active raised bog and degraded raised bog, habitats that are listed on Annex I of the E.U. Habitats Directive. Active raised bog comprises areas of high bog that are wet and actively peat-forming, where the percentage cover of bog mosses (*Sphagnum* spp.) is high, and where some or all of the following features occur: hummocks, pools, wet flats, *Sphagnum* lawns, flushes and soaks. Degraded raised bog corresponds to those areas of high bog whose hydrology has been adversely affected by peat cutting, drainage and other land use activities, but which are capable of regeneration.

The site consists of a bog which has developed in a basin, which is almost divided into two by a ridge of mineral material. North of this ridge, there is only a narrow strip of bog. The main body of the bog lies south of the ridge. The surface of the southern section is very wet with undulating hummock/hollow microtopography. Forestry plantations occur on the east and southern margins of the site and are present on the high bog in the south-east and south-west. Extensive areas of cutover are found all around the margins of the high bog and in particular in the north and west.

Much of the high bog has vegetation typical of the Midlands Raised Bog type, in particular the expanse of uncut bog to the south and south-east. The vegetation consists of Ling Heather (*Calluna vulgaris*), Carnation Sedge (*Carex panicea*) and the lichen *Cladonia portentosa*. Cottongrasses (*Eriophorum vaginatum* and *E. angustifolium*) replace Carnation Sedge as co-dominants in the southern and central areas. The surface is very wet with an undulating hummock/hollow microtopography. Pools and some drains have become infilled on the high bog with bog mosses (*Sphagnum cuspidatum*, *S. magellanicum* and *S. capillifolium*), White Beak-sedge (*Rhynchospora alba*) and Common Cottongrass (*Eriophorum angustifolium*). Bog mosses cover much of the surface, forming hummocks of *S. papillosum* and the rarer *S. imbricatum* and *S. fuscum*. Ling Heather, Hare's-tail Cottongrass (*Eriophorum vaginatum*), Bog-rosemary (*Andromeda polifolia*) and Cranberry (*Vaccinium oxycoccos*) cover the hummocks. Carpets of bog moss (*S. capillifolium*, *S. magellanicum*, and *S. cuspidatum*) occur throughout the site. The abundance of a nationally rare species of bog moss, *Sphagnum pulchrum*, is noteworthy. This moss frequently dominates wet channels on the high bog. Fir Clubmoss (*Huperzia selago*) is also found on the bog. Scots Pine (*Pinus sylvestris*) is colonising the eastern part of the bog.

Current landuse on the site consists of mechanised peat-cutting, forestry and agricultural reclamation around the edge of the high bog. Peat-cutting is carried out along the track and road, which form the northern and north-western site boundaries. Afforestation occurs on the bog margins and extends onto intact or high bog. Some agricultural grassland has been reclaimed from cutover bog to the south and north-west of the site. Damaging activities associated with these landuses include drainage throughout the site (both old and recent) and extensive burning of the bog. These are all activities that have resulted in loss of habitat and damage to the hydrological status of the site, and which pose a continuing threat to its viability.

Carn Park Bog is a site of considerable conservation significance comprising as it does a raised bog, a rare habitat in the E.U. and one that is becoming increasingly scarce and under threat in Ireland. This site supports a good diversity of raised bog microhabitats, including hummock/hollow complexes, pools and *Sphagnum* lawns, as well as the rare species *Sphagnum pulchrum*. Active raised bog is listed as a priority habitat on Annex I of the E.U. Habitats Directive. Priority status is given to habitats and species that are threatened throughout the E.U. Ireland has a high proportion of the E.U. resource of this habitat type (over 60%) and so has a special responsibility for its conservation at an international level.

#### **Crosswood Bog (002337)**

**SITE NAME: Crosswood Bog**

**SITE CODE: 002337**

Crosswood Bog is situated approximately 5 km east of Athlone, Co. Westmeath, mainly in the townlands

of Crosswood, Glenaghanvoneen, and Creggan Lower. The site comprises a raised bog that includes both areas of high bog and cutover bog. The northern margin of the bog lies along the southern side of the Dublin-Galway railway line.

The site is a candidate Special Area of Conservation selected for active raised bog and degraded raised bog, habitats that are listed on Annex I of the E.U. Habitats Directive. Active raised bog comprises areas of high bog that are wet and actively peat-forming, where the percentage cover of bog mosses (*Sphagnum* spp.) is high, and where some or all of the following features occur: hummocks, pools, wet flats, *Sphagnum* lawns, flushes and soaks. Degraded raised bog corresponds to those areas of high bog whose hydrology has been adversely affected by peat cutting, drainage and other land use activities, but which are capable of regeneration.

The site consists of a quaking bog, with a well-developed sequence of pools, hollows and hummocks, and a flush supporting woodland. Cutover occurs on all margins of the bog.

Much of the high bog has vegetation typical of the Midlands Raised Bog type, consisting of Ling Heather (*Calluna vulgaris*), Bog Asphodel (*Narthecium ossifragum*) and the bog moss *Sphagnum magellanicum*. The northern and eastern parts of the bog are locally wet and occasionally quaking and characterised by flats with Bog Asphodel and hummocks of *Sphagnum imbricatum* - this is a scarce species both on the site and nationally. There are well-developed pools with healthy populations of bog moss (*S. cuspidatum*). Regenerating bog moss (*S. magellanicum*) hummocks and a good bog moss carpet (*S. capillifolium* and *S. papillosum*) can be observed to the north-west. A flush is located in the centre of the bog and supports a thick carpet of mosses and liverworts, such as *Aulacomnium palustre*, *Polytrichum commune* and *Pleurozium schreberi*. Here are also found Hare's-tail Cottongrass (*Eriophorum vaginatum*), Ling Heather, Cranberry (*Vaccinium oxycoccos*), Crowberry (*Empetrum nigrum*), Downy Birch (*Betula pubescens*), pines (*Pinus* spp.) and Sessile Oak (*Quercus petraea*). The south-western end is drier with a poorer cover of *Sphagnum* and an abundance of Carnation Sedge (*Carex panicea*), Deergrass (*Scirpus cespitosus*), Ling Heather, Bog Asphodel and lichens (*Cladonia* spp.). The site is noteworthy for the presence of the rare bog moss *Sphagnum pulchrum* which is locally frequent in the pool system and the quaking flats to the east; *Sphagnum fuscum*, a relatively scarce species, is found on the drier hummocks here. Fir Clubmoss (*Huperzia selago*) is also found on the bog. Old cutover bog supports scrub vegetation of Ling Heather, Gorse (*Ulex* sp.), Downy Birch and willows (*Salix* spp.).

Current landuse on the site consists of peat-cutting around the edge of the high bog; it is more intensively cut on the western and southern margins. While the northern margin has drains that extend into the intact bog it is relatively protected from development due to the proximity to the railway. Forestry is found to the south of the site on areas of cutover bog. Some fields on old cutover are used for pasture and are presently undergoing further reclamation. Damaging activities associated with these landuses include drainage throughout the site (both old and recent) and extensive burning of the high bog. These are activities that have resulted in loss of habitat and damage to the hydrological status of the site, and pose a continuing threat to its viability.

Crosswood Bog is a site of considerable conservation significance comprising as it does a raised bog, a rare habitat in the E.U. and one that is becoming increasingly scarce and under threat in Ireland. This site supports a good diversity of raised bog microhabitats, including hummock/hollow complexes, pools and wooded flushes. Furthermore, it supports a population of the rare bog moss *Sphagnum pulchrum*. Active raised bog is listed as a priority habitat on Annex I of the E.U. Habitats Directive. Priority status is given to habitats and species that are threatened throughout the E.U. Ireland has a high proportion of the total E.U. resource of this habitat type (over 60%) and so has a special responsibility for its conservation at an international level.

#### **Moneybeg & Clare Island Bogs (002340)**

**SITE NAME: Moneybeg & Clare Island Bogs**

**SITE CODE: 002340**

This site is located on the border of Counties Meath and Westmeath 9 km east of the town of Granard.



It is situated mainly in the townlands of Clareisland or Derrymacegan, Williamstown and Moneybeg in County Westmeath and Ross in County Meath.

The site is a candidate Special Area of Conservation selected for active raised bog, degraded raised bog and Rhynchosporion, habitats that are listed on Annex I of the E.U. Habitats Directive. Active raised bog comprises areas of high bog that are wet and actively peat-forming, where the percentage cover of bog mosses (*Sphagnum* spp.) is high, and where some or all of the following features occur: hummocks, pools, wet flats, *Sphagnum* lawns, flushes and soaks. Degraded raised bog corresponds to those areas of high bog whose hydrology has been adversely affected by peat cutting, drainage and other land use activities, but which are capable of regeneration. The Rhynchosporion habitat occurs in wet depressions, pool edges and erosion channels where the vegetation includes White Beak-sedge (*Rhynchospora alba*) and/or Brown Beak-sedge (*R. fusca*), and at least some of the following associated species, Bog Asphodel (*Narthecium ossifragum*), Sundews (*Drosera* spp.), Deergrass (*Scirpus cespitosus*), Carnation Sedge (*Carex panicea*).

The site consists of two lowland raised bogs at Moneybeg and Clareisland, situated on the south and south-west shores of Lough Sheelin. An important feature of these bogs is that in some areas the transition from high bog to open water is intact and not separated by cutover.

The raised bog habitat includes both areas of high bog and cutover. The high bog at Moneybeg consists of a single small dome with extensive cutover to the east and west. Overall the high bog is flat with slopes associated with the southern margin. There is a wet area with a characteristic microtopography of pools, hummocks and hollows. The local road from Mount Nugent to Finnea runs through the bog and an isolated northern section adjoins the lake shore. There is also a large mound located to the west of the high bog. The raised bog is surrounded by agricultural land, which in the east, slopes steeply down to the cutover. There is forestry to the south and south-west. The raised bog at Clareisland consists of a small linear high bog extending along the shore of Lough Sheelin with only limited cutover to the east and west. There is an extensive wet area with frequent pools on the high bog and there is a slight slope towards the semi-natural lake margin. The local road described above runs by the southern margin of the high bog and there is forestry on cutover south of the road.

These high bogs have vegetation typical of Midland Raised Bog type consisting of Ling Heather (*Calluna vulgaris*), Hare's-tail Cottongrass (*Eriophorum vaginatum*), White Beak-sedge and bog mosses (*Sphagnum* spp.) with Cranberry (*Vaccinium oxycoccos*) and Bog-rosemary (*Andromeda polifolia*) also present. On Moneybeg Bog, the bog mosses *Sphagnum capillifolium*, *S. papillosum*, *S. tenellum* and *S. imbricatum* are plentiful in the extensive wet area, with many large pools lined by bog mosses including the rare *S. fuscum*. Great Sundew (*Drosera anglica*) is present in some pools along with the bog moss *S. cuspidatum*. A few of the pools are completely in-filled with bog mosses and Common Cottongrass (*E. angustifolium*).

Clareisland Bog has a semi-natural margin with Lough Sheelin and an extensive wet area with a high cover of bog mosses and pools. Most of the pools are in-filling with Bog Asphodel, White Beak-sedge and bog mosses. Great Sundew and the bog moss *S. cuspidatum* occur in the pools and other bog moss species occur at the pool edges, especially *S. capillifolium*, *S. papillosum*, *S. magellanicum* and the rare *S. fuscum*. The lichen *Cladonia portentosa* is common, along with Bog-rosemary and Cranberry growing through the bog mosses. The semi-natural margin is dominated by tall Ling Heather with lush carpets of the moss *Hypnum jutlandicum* and large hummocks of the bog moss *S. capillifolium*. There are many deep cracks in the peat due to subsidence at the lake margin. A thin margin of Gorse (*Ulex europaeus*) and Downy Birch (*Betula pubescens*) scrub occurs at the lake edge.

At Moneybeg Bog there is extensive areas of cutover to the east and west, which have some active peat-cutting. Sections of old cutover are dominated by Ling Heather, Purple Moor-grass (*Molinia caerulea*) and Gorse scrub. These areas are bordered by Birch scrub and woodland. Across the road on the slope to the lake there is old cutover dominated by Purple Moor-grass grading into Birch scrub at the shoreline. The presence of a large wooded mound, which may be man-made in origin adds to the interest of this raised bog. At Clareisland Bog there are abandoned peat-cuttings in the north-west

dominated by Ling Heather and to the east there is cutover dominated by Purple Moor-grass with encroaching Gorse scrub.

Landuse at Moneybeg Bog includes active peat-cutting to the east and west and forestry along the western margin. Current landuse at Clareisland Bog includes peat cutting to the west and north-west of the high bog and forestry along the southern margin. Damaging activities associated with these landuses include drainage and burning. Drainage has occurred on these high bogs in the past and at Moneybeg Bog there is evidence of recent and frequent burning of the high bog. These activities have resulted in habitat loss and damage to the hydrological status, and pose a continuing threat to the viability of these high bogs.

The Moneybeg and Clareisland Bogs site is of considerable conservation significance, comprising as it does two raised bogs with semi-natural lake margins at the north-eastern extreme of the range of raised bogs in Ireland. This is a rare habitat in the E.U. and one that is becoming increasingly scarce and under threat in Ireland. The site supports a diversity of raised bog habitats including, hummock/hollows and pools. Active raised bog is listed as a priority habitat on Annex I of the E.U. Habitats Directive. Priority status is given to habitats and species that are threatened throughout the E.U. Ireland has a high proportion of the total E.U. resource of this type (over 60%) and so has a special responsibility for its conservation at an international level.

### **Mont Hevey Bog (002342)**

**SITE NAME: Mont Hevey Bog**

**SITE CODE: 002342**

Mount Hevey Bog is situated approximately 4 km north-east of Kinnegad, in the townlands of Cloncrave, White Island, Aghamore, Kilwarden and Kilnagalliagh. The Meath-Westmeath county boundary runs through the centre of the bog. The site comprises a raised bog that includes both areas of high bog and cutover bog. The Dublin-Sligo railway runs through the northern part of the bog isolating two northern lobes. The northern lobes are adjacent to the Royal Canal.

The site is a candidate Special Area of Conservation selected for active raised bog, degraded raised bog and Rhynchosporion, habitats that are listed on Annex I of the E.U. Habitats Directive. Active raised bog comprises areas of high bog that are wet and actively peat-forming, where the percentage cover of bog mosses (*Sphagnum* spp.) is high, and where some or all of the following features occur: hummocks, pools, wet flats, *Sphagnum* lawns, flushes and soaks. Degraded raised bog corresponds to those areas of high bog whose hydrology has been adversely affected by peat cutting, drainage and other land use activities, but which are capable of regeneration. The Rhynchosporion habitat occurs in wet depressions, pool edges and erosion channels where the vegetation includes White Beak-sedge (*Rhynchospora alba*) and/or Brown Beak-sedge (*R. fusca*), and at least some of the following associated species, Bog Asphodel (*Narthecium ossifragum*), Sundews (*Drosera* spp.), Deergrass (*Scirpus cespitosus*), Carnation Sedge (*Carex panicea*).

The site consists of a long narrow bog separated into four sub-sections; the larger eastern section supports a wet quaking area with hummock/hollows and pool complex. Hummock/hollow complex also occurs in the south-west lobe and the north-west lobe of the site. An infilled lake is now a soak system. Forestry occurs on the most easterly section of the site. There is abandoned cutover all around this bog and particularly on the western section. There is some wet and actively regenerating areas of the cutover along the southern margins of the western lobe and along the railway.

Much of the high bog has vegetation typical of the Midlands Raised Bog type. The vegetation consists of Ling Heather (*Calluna vulgaris*), Cottongrass (*Eriophorum angustifolium* and *E. vaginatum*), Bog Asphodel, White Beak-sedge and midland indicator species Bog-rosemary (*Andromeda polifolia*) and the bog moss *Sphagnum magellanicum*. The wet quaking area in the eastern section of the bog has pools that support the bog moss *Sphagnum cuspidatum* with White Beak-sedge, Cottongrass and Ling Heather at the edges. The hummock/hollow complex supports a range of hummock-forming bog mosses, including *Sphagnum imbricatum* and *S. fuscum*, as well as other species such as *S. capillifolium*,

*S. magellanicum* and *S. papillosum*. Other plants found in the hummock/hollow complexes are Bog-rosemary, Cross-leaved Heath (*Erica tetralix*), Bog Asphodel and Deergrass.

The infilled lake is wet and quaking and the vegetation is dominated by Purple Moor-grass (*Molinia caerulea*), Bog-myrtle (*Myrica gale*) and Downy Birch (*Betula pubescens*) with bog mosses *Sphagnum palustre* and *S. papillosum*. The birch trees appear to be between 20 and 30 years old and the Bog Myrtle is over 150 cm high. The edge of the former lake is clearly marked by robust plants of Ling Heather. Some areas of old abandoned cutover bog on the site are very wet and regenerating well, with a good cover of bog mosses, including such species as *Sphagnum cuspidatum*, *S. papillosum*, *S. capillifolium*, *S. auriculatum* and *S. subnitens*.

Current landuse on the site consists of limited mechanised peat-cutting, mostly on the eastern end of the high bog. There are areas of old peat cuttings all around the site with some very old abandoned regenerating cutover along the edge of the railway. The area to the east of the site has been afforested. Areas of cutover have been reclaimed for agricultural purposes. Damaging activities associated with these landuses include drainage throughout the site (both old and recent) and burning of the high bog. These are all activities that have resulted in loss of habitat and damage to the hydrological status of the site, and pose a continuing threat to its viability.

Mount Hevey Bog is a site of considerable conservation significance comprising as it does a raised bog, a rare habitat in the E.U. and one that is becoming increasingly scarce and under threat in Ireland. The site supports a good diversity of raised bog microhabitats, including hummock/hollow complexes, pools, flushes and regenerating cutover, as well as a number of scarce plant species. Active raised bog is listed as a priority habitat on Annex I of the E.U. Habitats Directive. Priority status is given to habitats and species that are threatened throughout the E.U. Ireland has a high proportion of the total E.U. resource of this habitat type (over 60%) and so has a special responsibility for its conservation at an international level.

## **Special Protection Areas**

### **Lough Derravaragh SPA (004043)**

**SITE NAME:** Lough Derravaragh SPA

**SITE CODE:** 004043

Lough Derravaragh is located approximately 12 km north of Mullingar town. It is a medium- to large-sized lake of relatively shallow water (maximum depth 23 m). The lake extends along a south-east/north-west axis for approximately 8 km. The Inny River, a tributary of the River Shannon, is the main inflowing and outflowing river. It is a typical limestone lake with water of high hardness and alkaline pH, and is classified as a mesotrophic system.

A notable feature is the range of charophytes that occur in the lake (eight species have been recorded, including the rare, Red Data Book species *Chara denudata* and *C. tomentosa*). It has a good diversity of marginal habitats. At the western end of the lake are extensive areas of swamp dominated by Common Reed (*Phragmites australis*). Elsewhere along the shore there is freshwater marsh vegetation dominated by sedges (*Carex* spp.) and tussock-forming grasses such as Tufted Hair-grass (*Deschampsia cespitosa*) and fescues (*Festuca* spp.), with a range of flowering herbs including Nodding Bur-Marigold (*Bidens cernua*) and Trifid Bur-Marigold (*Bidens tripartita*). The lakeshore is a mineral-rich substrate and several plant species of poor fen habitats occur in abundance, such as Black Bog-rush (*Schoenus nigricans*) and Long-stalked Yellow-sedge (*Carex lepidocarpa*). Deciduous woodland fringes the lake in some areas.

Lough Derravaragh is one of the most important midland lakes for wintering waterfowl. It supports nationally important populations of Little Grebe (42), Mute Swan (159), Pochard (3,129), Tufted Duck (1,073) and Coot (1,358) - all counts are average maxima over the five winters 1995/96 to 1999/00. The Pochard population is of particular note as it represents over 6% of the national total, and at times has exceeded the threshold for International Importance (i.e. 3,500). The lake is a traditional haunt for the internationally important Midland lakes Greenland White-fronted Goose flock (which also uses

Loughs Iron, Owel and Ennell). This flock, whose numbers usually range between 300 and 400 birds, use the lake mainly for roosting purposes. A regionally important population of Whooper Swan (102) occurs, along with a range of other species including Great Crested Grebe (34), Cormorant (34), Wigeon (207), Teal (52), Mallard (195), Pintail (6), Shoveler (12), Goldeneye (46), Golden Plover (158) and Lapwing (1,079).

Enrichment of the lake, mainly by agricultural run-off, is a threat and could affect the bird populations and especially the diving ducks. An increase in recreational and wildfowling activities could cause disturbance to the birds though this is not considered to be a major threat.

Lough Derravaragh is of major ornithological importance as it regularly supports nationally important populations of five species, and at times is used by the internationally important population of Greenland White-fronted Goose which is based in the region. Also of note is that three of the species which occur at the site (Greenland White-fronted Goose, Whooper Swan, Golden Plover) are listed on Annex I of the E.U. Birds Directive.

#### **Lough Ennell SPA (004044)**

**SITE NAME: Lough Ennell SPA**

**SITE CODE: 004044**

Lough Ennell is a large, limestone lake. It has a length of approximately 6.5 km along its long axis and is mostly c. 2 km wide. The River Brosna is the principal inflowing and outflowing river. It is a relatively shallow lake, with a maximum depth of c. 30 m. The water is hard, with low colour and markedly alkaline pH. The lake is classified as a mesotrophic system though it has been eutrophic in the past. The lake bottom is of limestone with a marl deposit.

Lough Ennell supports a diverse aquatic flora, with a particularly well-developed charophyte flora, including two Red Data Book species, *Chara denudata* and *C. tomentosa*. Reedbeds and species-poor swamp vegetation fringe part of the lake, particularly around the points of inflow and outflow and on the eastern shore, around Tudenham Park, where Common Reed (*Phragmites australis*) is abundant. Water-plantain (*Alisma plantago-aquatica*), Cowbane (*Cicuta virosa*), Frogbit (*Hydrocharis morsus-ranae*) and Tufted Sedge (*Carex elata*) also occur. Much of the lakeshore is rather dry, stony ground, which was formerly part of the lake bed but is now exposed by drainage, and colonised by calcareous grassland. Alkaline fen also occurs on the lake shore. There are several islands within the lake. Lough Ennell is an important Trout fishery.

Lough Ennell is one of the most important Midland lakes for wintering waterfowl, with nationally important populations of Mute Swan (340), Pochard (738), Tufted Duck (1,303) and Coot (433) - all figures are average peaks for the 5 seasons 1995/96-1999/00. The population of Tufted Duck represents over 3% of the national total. At times, the lake is utilised as a roost (with limited feeding) by the internationally important Midland lakes population of Greenland White-fronted Goose (c. 400 strong). The site also attracts Golden Plover (200) and Lapwing (673) though these feed mainly outside of the site, as well as Little Grebe (30), Mallard (93), Great Crested Grebe (24) and Goldeneye (22).

Lough Ennell is very vulnerable to pollution from agricultural and domestic sources though water quality has been satisfactory in recent years. A deterioration in water quality could affect bird populations (as shown by marked fluctuations in some populations in the past). It is an important amenity area, much used for fishing, boating and camping. Parts of the shoreline are managed for visitor access and amenity. Increases in such recreational activities could cause disturbance to the birds.

Lough Ennell is of ornithological significance for wintering waterfowl, with four species having populations of national importance. The occurrence of a further two species in the vicinity of the lake, Greenland White-fronted Goose and Golden Plover, is of particular note as these are listed on Annex I of the E.U. Birds Directive.

#### **Glen Lough SPA (004045)**

**SITE NAME: Glen Lough SPA**

**SITE CODE: 004045**

Glen Lough is situated about 5 km north-west of Lough Iron, to which it is connected by the Black River. Extensive drainage in the 1960s has resulted in a dramatic drop in the watertable here, with the result that there is now little open water, except during flooding in the winter months. Sedge-dominated freshwater marsh now occupies the majority of what was once open water. Plant species present include Bottle Sedge (*Carex rostrata*), Water Horsetail (*Equisetium fluviatile*) and Canary Reed-grass (*Phalaris arundinacea*). Other habitats present include reedswamp, wet and dry grassland, cutaway bog colonised by heath vegetation, scrub and wet willow (*Salix* spp.) woodland.

An internationally important Whooper Swan population uses the site at times. This flock (average peak of 272 individuals for the 5 seasons 1995/96-1999/00) also uses Lough Iron and a range of grassland feeding areas in the vicinity. At times, the site is visited by part of the internationally important Midland lakes Greenland White-fronted Goose population, although numbers are low (17). Dabbling ducks are well represented, but in relatively low numbers, and include such species as Wigeon (85), Teal (75), Mallard (46), Pintail (7) and Shoveler (23). Lapwing (189) are also found in the area.

Glen Lough is surrounded by intensively farmed agricultural land and undoubtedly receives nutrient run-off. The effect of this on the vegetation and indirectly the birds is not known. Planting of forestry around part of the margin of the site has occurred. Any further planting would be of concern as this could destroy feeding areas used by the swans, geese and herbivorous wildfowl.

Whilst this site attracts a range of wintering waterfowl, the principal interest is the internationally important Whooper Swan population that is based in the area. Whooper Swan is of particular note as it is listed on Annex I of the E.U. Birds Directive. Greenland White-fronted Goose, nowadays an occasional visitor to the site, is also listed on Annex I of this Directive. The site provides useful habitat for Shoveler, which in Ireland is a fairly localised species.

**Lough Iron SPA (004046)****SITE NAME: Lough Iron SPA****SITE CODE: 004046**

Lough Iron is a small- to moderately-sized midland lake, located some 12 km north-west of Mullingar. It is situated on the Inny River, which flows from Lough Derravaragh approximately 5 km to the north-east. Lough Owel occurs a few kilometres to the south-east and is connected to Lough Iron by a small stream. The underlying geology is limestone and the lake is mesotrophic in character.

Drainage of the River Inny in the 1960s has led to a dramatic drop in the level of the lake and this in turn has led to the development of freshwater marsh and wet grassland on what was previously lake bed. The lake is partially surrounded by agricultural land, much of which is managed intensively. Conifers are also present along stretches of the lake edge. The grassland fields which are used by geese and swans for feeding purposes are included in the site. Some conifer plantations along the south-western shore of the lake are also included in the site to provide screening for feeding birds.

The dominant wetland plant species along the margins of the lake are Canary Reed-grass (*Phalaris arundinacea*) and Purple Moor-grass (*Molinia caerulea*), the latter species forming large expanses of wet grassland. There are also patches of calcareous fen, wet woodland dominated by Downy Birch (*Betula pubescens*) and tall sedge swamp dominated by Tufted Sedge (*Carex elata*) and Bottle Sedge (*Carex rostrata*). Quite a wide band of Common Reed (*Phragmites australis*) fringes the lake. The marsh areas contain several scarce plant species, including Fen Bedstraw (*Galium uliginosum*), Frogbit (*Hydrocharis morsus-ranae*), and Marsh Pea (*Lathyrus palustris*).

Lough Iron is of International Importance as a site for wintering waterfowl. It is a traditional haunt for the internationally important Midland lakes Greenland White-fronted Goose flock (which also use Loughs Owel, Ennell and Derravaragh), and is also frequented by a nationally important population of Whooper

Swan. Counts for principal waterfowl species over the five winters 1995/96 to 1999/00 are as follows (figures are average maxima): Mute Swan (52), Whooper Swan (154), Greenland White-fronted Goose (409), Wigeon (1,229), Teal (736), Mallard (257), Pintail (19), Shoveler (164), Pochard (239), Tufted Duck (208), Coot (293), Golden Plover (2,200), Lapwing (1,670), Snipe (30) and Curlew (136). The populations of Whooper Swan, Wigeon, Teal, Shoveler and Golden Plover are of National Importance. At times the Whooper Swan population exceeds the qualifying threshold (160) for International Importance.

Lough Iron SPA is of high ornithological importance primarily as it supports an Internationally Important population of Greenland White-fronted Geese, with both feeding and roosting areas available to the birds. Nowadays it is the main site used by this flock. An Internationally Important population of Whooper Swans sometimes occurs. The site also supports a notable diversity of other waterfowl, including dabbling duck, diving duck and waders. Of particular importance is that three of the species which occur are listed on Annex I of the E.U. Birds Directive (Greenland White-fronted Goose, Whooper Swan and Golden Plover).

#### **Lough Owel SPA (004047)**

**SITE NAME: Lough Owel SPA**

**SITE CODE: 004047**

Lough Owel is a medium- to large-sized lake, with a length of c. 6 km along its long axis and a maximum width of 3 km. It is fed by a number of small streams and the main outflow is to the Royal Canal. Water is relatively shallow, with a maximum depth of 22 m. Overlying Carboniferous limestone, Lough Owel is one of the most important examples of a limestone lake in the Midlands. The water is moderately hard, alkaline and virtually colourless. The lake appears to be relatively unproductive with low levels of orthophosphate and moderate chlorophyll concentrations. The lake is classified as a mesotrophic system and its status has been stable in recent years.

Aquatic vegetation includes a number of stoneworts (*Chara* spp., notably *C. denudata* and *C. tomentosa* which are Red Data Book species). The rocky nature of the shoreline has given rise to marginal vegetation which is patchy and sparse. Apart from some reedswamp formed by Common Reed (*Phragmites australis*) and Common Clubrush (*Scirpus lacustris*), shoreline vegetation is dominated by occasional patches of Alder (*Alnus glutinosa*). Areas of marsh and fen occur above the shoreline in the northern and south-western corners of the lake though these are largely outside of the site. Several small islands occur in the southern sector.

Lough Owel is one of the most important Midland lakes for wintering waterfowl, with nationally important populations of Shoveler (142) and Coot (1,825) - figures given are average peaks for the five seasons 1995/96-1999/00. The populations for both of these species represent a significant proportion (c. 5%) of the respective national totals. The lake is also of importance for diving duck, including Pochard (291), Tufted Duck (227) and Goldeneye (75). At times, the lake is utilised as a roost by the internationally important Midland lakes Greenland White-fronted Goose population (c. 400 strong). The lake also supports populations of Little Grebe (16), Great Crested Grebe (18) and Cormorant (32). Lough Owel is one of the most important fishing lakes in the Midlands and is especially good for Trout.

Whilst the water quality has been satisfactory in recent years, Lough Owel is vulnerable to pollution from agricultural and domestic sources. A deterioration in water quality could affect bird populations. Some of the areas above the shoreline, which are not within the site, have been afforested - further afforestation could be damaging to the system. An increase in recreational and wildfowling activities could cause disturbance to the birds though this is not considered to be a major threat.

Lough Owel has very significant populations of two species, Shoveler and Coot. It is also a notable site as it is used on occasions by the Midlands Greenland White-fronted Goose flock, which is of international importance.

**Lough Kinale & Derragh Lough SPA (004061)**  
**SITE NAME: Lough Kinale & Derragh Lough SPA**

**SITE CODE: 004061**

Lough Kinale is a relatively small lake that is situated immediately downstream of Lough Sheelin, both lakes being near the top of the catchment of the Inny River, a main tributary of the River Shannon. Derragh Lough, a much smaller system, is connected to Lough Kinale and the Inny River. This is a typical limestone system and is very shallow (maximum depth of Lough Kinale is c. 4 m). As with Lough Sheelin, the trophic status of the lake has varied greatly since the 1970s due to pollution. It was recently (1998-2000) classified as a highly eutrophic system. The lake was formerly an important Trout fishery.

Lough Kinale has two main basins, almost separated by swamp formations. Reed swamp is frequent around the lakes, with Common Reed (*Phragmites australis*) and Tufted-sedge (*Carex elata*) occurring commonly. A calcium-rich small sedge marsh occurs along parts of the shoreline. This is characterised by species such as Long-stalked Yellow-sedge (*Carex lepidocarpa*), Marsh Pimpernel (*Anagallis tenella*), Knotted Pearlwort (*Sagina nodosa*), Marsh Pennywort (*Hydrocotyle vulgaris*) and Water Mint (*Mentha aquatica*). Areas of bog occur around the margins of the lakes in places but some of these have been planted with conifers.

Despite the very variable water quality in recent decades, Lough Kinale and Derragh Lough remain an important site for wintering waterfowl, especially diving duck. The site supports nationally important populations of two species, i.e. Pochard (951) and Tufted Duck (449) - figures are average peaks for the 5 seasons 1995/96-1999/00. A large population of Mute Swan (120), close to the threshold for national importance, also uses the site. Coot (199), whilst still occurring in substantial numbers, formerly had a population of national importance. A number of other species are found, in relatively low numbers, including Great Crested Grebe (25), Mallard (130) and Goldeneye (22). Marginal grassland areas outside of the site attract feeding wildfowl and waders such as Lapwing and Golden Plover.

The variable water quality over the years, with periods of highly eutrophic conditions, undoubtedly has had adverse impacts on the wintering waterfowl, and especially the diving duck. This would appear to be borne out by very variable numbers of birds recorded over the years. The lake is still vulnerable to pollution and it is considered that there is urgent need to reduce the phosphorus inputs to the system. Afforestation has taken place close to parts of the shoreline and further planting would be undesirable. Angling and wildfowling activities currently cause some disturbance to the birds and any increase in such activities would be of concern.

Whilst relatively small in area and subject to a number of damaging activities, this site retains national importance for two duck species. With an improvement in the environmental conditions pertaining at the site, higher numbers of some species would undoubtedly occur.

**Lough Ree SPA (004064)**  
**SITE NAME: Lough Ree SPA**

**SITE CODE: 004064**

Situated on the River Shannon between Lanesborough and Athlone, Lough Ree is the third largest lake in the Republic of Ireland. It lies in an ice-deepened depression in Carboniferous Limestone. Some of its features (including the islands) are based on glacial drift. The main inflowing rivers are the Shannon, Inny and Hind, and the main outflowing river is the Shannon. The greater part of Lough Ree is less than 10 m in depth, but there are six deep troughs running from north to south, reaching a maximum depth of about 36 m just west of Inchmore. The lake has a very long, indented shoreline and hence has many sheltered bays. It also has a good scattering of islands, most of which are included in the site. The lake is classified as a mesotrophic system, but the size of the system means that a range of conditions prevail depending on, for example, rock type. This gives rise to local variations in nutrient status and pH, which in turn result in variations in the phytoplankton and macrophyte flora. In the most recent

assessment of water quality a reduced planktonic growth was noted, which may be due to the spread of the Zebra Mussel (*Dreissena polymorpha*), which feeds on phytoplankton.

The waters of Lough Ree tend to be strongly peat-stained, restricting macrophytes to depths of less than 2 m. The aquatic flora includes such species as Intermediate Bladderwort (*Utricularia intermedia*), pondweeds (*Potamogeton* spp.), Quillwort (*Isoetes lacustris*), stoneworts (*Chara* spp., including *C. pedunculata*) and Arrowhead (*Sagittaria sagittifolia*). Beds of Common Reed (*Phragmites australis*) are an extensive habitat in a number of the more sheltered places around the lake; monodominant stands of Common Club-rush (*Scirpus lacustris*), Slender Sedge (*Carex lasiocarpa*) and Saw Sedge (*Cladium mariscus*) also occur as swamps in suitable places. Some of these grade into species-rich calcareous fen or freshwater marsh. Lowland wet grassland, some of which floods in winter, occurs frequently around the shore. Dry, broad-leaved, semi-natural woodland occurs in several places around the lake, and on some of the islands within the site, notably on Hare Island. Pockets of wet woodland also occur around the lake, most of which are dominated by willows (*Salix* spp.), Alder (*Alnus glutinosa*) and Downy Birch (*Betula pubescens*).

Lough Ree is one of the most important Midland sites for wintering waterfowl, with nationally important populations of Wigeon (1,475), Teal (912), Pintail (35), Tufted Duck (661), Goldeneye (137), Golden Plover (2,035) and Lapwing (3,870) occurring ? all figures are average peaks for the 5 seasons 1995/96-1999/00. Regionally important numbers of Whooper Swan (89) and Greenland White-fronted Goose (92) are found feeding in the vicinity of the lake, as are Golden Plover, Lapwing and, to some extent, Wigeon and Teal. Other species which occur in winter include Cormorant (64), Mallard (675), Coot (250), Shoveler (40), Curlew (167) and Great Crested Grebe (23), as well as the resident Little Grebe (34) and Mute Swan (93).

The site supports a nationally important population of Common Tern (90 pairs in 1990). It is a traditional breeding site for Black-headed Gull and whilst a full survey has not been carried out in recent years, substantial numbers of nesting birds were present on at least one island in 2003. Lesser Black-backed Gull and Common Gull have bred in the past and may still breed. Lough Ree is an important site for breeding duck and grebes, with Tufted Duck (265 individuals in late May 1995) and Great Crested Grebe (89 individuals in late May 1995) having populations of national importance. Of particular note is that Lough Ree is one of the two main sites in the country for breeding Common Scoter, a Red Data Book species. The most recent full census of the site for the species (in 1999) gave a population of c. 32 pairs. The woodland around the lake is a stronghold for Garden Warbler and this scarce species probably occurs on some of the islands within the site.

Otter, a species listed on Annex II of the E.U. Habitats Directive occurs frequently within the site. The endangered, Red Data Book fish species, Pollan (*Coregonus autumnalis pollan*) is recorded from Lough Ree, one of only four sites (L. Neagh, L. Erne, L. Ree and L. Derg) in which it occurs. The shrimp, *Mysis relicta*, occurs in the lake and is a relic of the glacial period in Ireland.

Whilst recently classified as a mesotrophic system, Lough Ree had been moderately eutrophic in the mid-1990s. It is vulnerable to artificial enrichment of the waters by agricultural and domestic waste. The recent reduction in phytoplanktonic growth has coincided with the invasion of the Shannon system by the Zebra Mussel; however, in the long-term this invasive bivalve may threaten the ecology of the lake. Recreational activities, especially boating, presently cause some disturbance to the birds and an increase in such activities would be of concern. Developments above the lakeshore could affect feeding grounds of some of the wintering waterfowl and nesting habitat for duck species.

Lough Ree is of high ornithological importance for both wintering and breeding birds. It supports nationally important populations of seven wintering waterfowl species, as well as other important species including Whooper Swan and Greenland White-fronted Goose (both of which are listed on Annex I of E.U. Birds Directive). The site has a range of breeding waterfowl, notably nationally important populations of Common Scoter, Great Crested Grebe and Tufted Duck. It also has a colony of Common Tern, another species listed on Annex I of the E.U. Birds Directive.



**Lough Sheelin SPA (004065)**  
**SITE NAME: Lough Sheelin SPA**

**SITE CODE: 004065**

Lough Sheelin is a medium- to large-sized lake, with a maximum length of 7 km. The lake lies near the top of the catchment of the Inny River, a main tributary of the River Shannon. It is a typical limestone lake and is fairly shallow (maximum depth 14 m). The trophic status of the lake has varied greatly since the 1970s due to pollution from mainly agricultural sources. It was recently (1998-2000) classified as a highly eutrophic system.

The shoreline is varied and no one plant species predominates over large areas. Species present include Jointed Rush (*Juncus articulatus*) and Common Spike-rush (*Eleocharis palustris*) growing on stony beaches, with Yellow Sedges (*Carex cf. demissa*), Lesser Spearwort (*Ranunculus flammula*), Water Mint (*Mentha aquatica*) and Black Bog-rush (*Schoenus nigricans*) also represented. The shore of the lake is also wooded in places and there are some very small offshore islands that are wooded with willows (*Salix aurita* and *S. cinerea*). The islands are fringed by swamp communities of Common Reed (*Phragmites australis*), Common Clubrush (*Scirpus lacustris*) and Bottle Sedge (*Carex rostrata*). A good range of Charophytes has been recorded from the lake, including *Chare denudata*, a Red Data Book species.

Despite very variable water quality in recent decades, Lough Sheelin remains a very important site for wintering waterfowl, especially diving duck. It supports nationally important populations of four species, i.e. Great Crested Grebe (140), Pochard (546), Tufted Duck (762) and Goldeneye (224) all figures are average peaks for the 5 seasons 1995/96-1999/00. A number of other species occur in relatively low numbers, including Mute Swan (28), Mallard (76), Coot (24), Little Grebe (19), Cormorant (42) and Black-headed Gull (202).

The variable water quality over the years, with periods of highly eutrophic conditions, undoubtedly has had some adverse impacts on the wintering waterfowl, especially the diving duck. This would appear to be borne out by the very variable numbers of birds recorded over the years. It is considered that there is urgent need to reduce the phosphorus inputs to the feeder streams entering the lake.

Lough Sheelin is a nationally important site for four species of wintering wildfowl and is one of the main Midlands lakes sites for wintering birds. An improvement in water quality would probably result in higher numbers of birds frequenting the site.

**Middle Shannon Callows SPA (004096)**  
**SITE NAME: Middle Shannon Callows SPA**

**SITE CODE: 004096**

The Middle Shannon Callows SPA is a long and diverse site which extends for approximately 50 km from the town of Athlone (at southern point of Lough Ree) to the town of Portumna (northern point of Lough Derg). The site averages about 0.75 km in width though in places is up to 1.5 km wide. Water levels on the site are greatly influenced by the very small fall between Athlone and Portumna and by the weir at Meelick. The Shannon Callows has a common boundary with two other sites of similar habitats, the River Suck Callows and the Little Brosna Callows, both of which are also Special Protection Areas.

The site has extensive areas of callow, or seasonally flooded, semi-natural, lowland wet grassland, along both sides of the river. The callows are mainly too soft for intensive farming but are used for hay or silage or for summer grazing. Other habitats of smaller area which occur alongside the river include lowland dry grassland, freshwater marshes, reedbeds and wet woodland. Along most of its length the site is bordered by raised bogs, now mostly exploited for peat, esker ridges and limestone-bedrock hills. The diversity of semi-natural habitats and the sheer size of the site attracts an excellent diversity of bird species and significant populations of several species.

The composition of the lowland wet grassland varies, depending on elevation and flooding patterns. Two habitats listed on Annex I of the EU Habitats Directive are well represented within the site ? Molinia meadows and lowland hay meadows. The former is characterised by the presence of the Meadow Thistle (*Cirsium dissectum*) and Purple Moor-grass (*Molinia caerulea*), while typical species in the latter include Meadow Fescue (*Festuca pratensis*), Rough Meadow-grass (*Poa trivialis*), Downy Oat-grass (*Avenula pubescens*) and Common Sorrel (*Rumex acetosa*). In places these two habitats grade into one another.

Low-lying areas of the callows with more prolonged flooding are characterised by Floating Sweet-grass (*Glyceria fluitans*), Marsh Foxtail (*Alopecurus geniculatus*) and wetland herbs such as Yellow Cress (*Rorippa* spp.), Water Forget-me-not (*Myosotis scorpioides*) and Common Spike-rush (*Eleocharis palustris*). Most of the callows, however, consist of a plant community characterised by Creeping Bent (*Agrostis stolonifera*), Brown Sedge (*Carex disticha*), Common Sedge (*Carex nigra*), and herbs such as Marsh Marigold (*Caltha palustris*) and Marsh Bedstraw (*Galium palustre*). Scarce plant species associated with the grassland include Meadow-rue (*Thalictrum flavum*), Summer Snowflake (*Leucojum aestivum*) and Marsh Stitchwort (*Stellaria palustris*).

The dry grassland areas, especially where they exist within hay meadows, are species-rich, and can contain many orchid species and such species as Cowslip (*Primula veris*), Adder's-tongue Fern (*Ophioglossum vulgatum*) and Spring-sedge (*Carex caryophylla*), as well as an unusually wide variety of grasses. In places along the edge of the callows there occurs wet broad-leaved woodland dominated by both Birch (*Betula pubescens*) and Alder (*Alnus glutinosa*) and dry broad-leaved woodland dominated by Hazel (*Corylus avellana*). There are also areas of raised bog and fen on old cut-away bog with species such as Black Bog-rush (*Schoenus nigricans*).

Two legally-protected plant species (Flora (Protection) Order 1999) occur in the site: Opposite-leaved Pondweed (*Groenlandia densa*) in drainage ditches, and Meadow Barley (*Hordeum secalinum*) on dry alluvial grassland. The Red Data Book plant Green-winged Orchid (*Orchis morio*) is known from dry calcareous grasslands within the site, while the site also supports a healthy population of Marsh Pea (*Lathyrus palustris*).

The Middle Shannon Callows qualifies as a site of International Importance for wintering waterfowl both on the total numbers regularly exceeding 20,000 birds (for example 27,581 in winter 1998/99) and for the Whooper Swan population (287 ? average peak count 1995/96-1999/00). Whooper Swan is listed on Annex I of the EU Birds Directive. Five further species occur in numbers of national importance (all figures are average peaks for winters 1995/96-1999/00) - Mute Swan 349, Wigeon 2,972, Golden Plover (listed on Annex I of the EU Birds Directive) 4,254, Lapwing 11,578 and Black-tailed Godwit 388. For some of these species, peak counts in the period have been considerably higher than the averages, such as 1,096 Black-tailed Godwits and 23,839 Lapwings. The importance of the site for species like Black-tailed Godwit and Whimbrel may have been underestimated if count coverage missed the brief spring peaks for these species. A wide range of other species occur in numbers of regional or local importance, including Bewick's Swan (listed on Annex I of the EU Birds Directive) 7, Teal 77, Tufted Duck 33, Dunlin 369, Curlew 129, Redshank 31 and Black-headed Gull 1,061. Small numbers of Greenland White-fronted Goose (listed on Annex I of the EU Birds Directive) use the Shannon Callows (average 21, peak 55) and these are generally associated with larger flocks which occur on the adjacent Little Brosna Callows and River Suck Callows. The callow grasslands provide optimum feeding grounds for these various species of waterfowl, while many of the birds also roost or rest within the site.

The site is also of national importance for breeding waterfowl. The total population of breeding waders (Lapwing, Redshank, Snipe and Curlew) on the Shannon and Little Brosna Callows in 1987 was one of three major concentrations in Ireland and Britain. Since then, however, numbers of at least Lapwing and Redshank have shown serious declines (a full survey of the callows is being carried out in 2002). For example, at a monitoring site at the callows at Shannon Harbour, numbers of Lapwing fell from 29 to 10 pairs and Redshank from 26 to 10 pairs between 1987 and 1994. Black-tailed Godwit, a very rare breeding species in Ireland, nests or attempts to nest in small numbers each year within the site. A further scarce breeding species, Shoveler, also nests in small numbers each year (an estimated 12 pairs in 1987).

The Shannon Callows continues to hold approximately 40% of the Irish population of Corncrake, a species of global conservation concern that is also listed on Annex I of the EU Birds Directive. Between 1997 and 2001, the average number of calling birds was 60, with a peak of 69. BirdWatch Ireland, in association with Dúchas and the RSPB, operate a grant scheme to encourage farming practices that favour the Corncrake and this has probably been responsible for the stabilisation of numbers in recent years. A related scarce species, the Quail, is also known to breed within the callow grasslands.

A good variety of other bird species are attracted to this site. Birds of prey, including scarce species such as Merlin (listed on Annex I of the EU Birds Directive) and wintering Hen Harrier (listed on Annex I of the EU Birds Directive), are regularly reported hunting over the callows. A range of passerine species associated with grassland and swamp vegetation breed, including Sedge Warbler, Grasshopper Warbler, Skylark and Reed Bunting. Kingfisher (listed on Annex I of the EU Birds Directive) is also regularly seen within the site. Whinchat, an uncommon breeding species, occurs in small numbers.

The wintering waterfowl within the Shannon Callows are difficult to monitor due to the size and inaccessibility of large parts of the site. In each winter there is usually one complete aerial census, as well as partial land-based counts. The population of Corncrake within the site is monitored each year and research is carried out on various aspects of the species' ecology. The breeding waders are also surveyed at intervals. About 30 ha of the callows is a nature reserve owned by voluntary conservation bodies.

The Shannon Callows has by far the largest area of lowland semi-natural grassland and associated aquatic habitats in Ireland and one in which there is least disturbance of natural wetland processes. Botanically, it is extremely diverse. In winter the site is internationally important for the total numbers of birds (regularly exceed 20,000) and for Whooper Swan in particular. It also holds nationally important populations of a further five species. Some of the wintering species are listed on Annex I of the EU Birds Directive, including Whooper Swan, Greenland White-fronted Goose and Golden Plover. In summer the site supports important populations of breeding waders. Perhaps the most important species which occurs in the site is Corncrake (the site holds 40% of the national total), as this is listed on Annex I of the EU Birds Directive and is Ireland's only globally endangered species.

#### **Garriskil Bog SPA (004102)**

**SITE NAME: Garriskil Bog SPA**

**SITE CODE: 004102**

Garriskil Bog SPA, a raised bog, lies 3 km west of Lough Derravaragh and 3 km east of Rathowen. It is bounded to the south-east and south-west by the rivers Inny and Riffey. The bog is underlain by calcareous shales with a low permeability. A substantial area of uncut high bog remains though much of this is classified as degraded raised bog. Old cutaway bog surrounds the high bog and parts of this are dominated by Downy Birch (*Betula pubescens*) scrub. The site contains good examples of active raised bog, degraded raised bog and depressions on peat substrates (*Rhynchosporion*), habitats which are listed on Annex I of the E.U. Habitats Directive.

The site has a well-developed system of pools and hummocks, and a large proportion of the uncut high bog is notably wet. Common vascular plant species on the bog include Ling (*Calluna vulgaris*), the cottongrasses *Eriophorum angustifolium* and *E. vaginatum*, Bog Asphodel (*Narthecium ossifragum*) and White Beak-sedge (*Rhynchospora alba*). Bog mosses (*Sphagnum* spp.) are important components of the vegetation. The cutaway bog has species such as Ling and Purple Moor-grass (*Molinia caerulea*), while in some parts Downy Birch woodland is developing.

The site is within the range of the midland lakes flock of Greenland White-fronted Geese, which is centred on four major lakes (Derravaragh, Iron, Owel and Ennell). There are 16 known feeding sites, mostly on intensively managed grassland. In the past the bog has been utilised by the geese (up to 60) but nowadays usage of raised bogs by geese is a rare event.

The site is within the breeding territory of a pair of Merlin. Nesting probably occurs outside of the site boundary, with the bog being used primarily as a foraging area.

Several wader species breed within the site, with an estimated 5 pairs of Snipe, 2-3 pairs of Curlew and 2 pairs of Redshank. Barn Owl has been recorded hunting along the margins of the bog, while Red Grouse is considered to occur occasionally.

While the site appears to have been abandoned by wintering Greenland White-fronted Geese, it is still of some ornithological importance as it supports a typical range of bird species of midland raised bogs, including Merlin. Merlin is of high conservation importance as it is listed on Annex I of the E.U. Birds Directive.

## Natural Heritage Areas

### Clonydonnin Bog NHA (000565)

**SITE NAME:** Clonydonnin Bog NHA

**SITE CODE:** 000565

Clonydonnin Bog NHA is located on the border of Co. Offaly and Co. Westmeath, approximately 13 km south-east of Athlone. It is situated mainly in the townlands of Esker, Laughil and Castletown. The site comprises an area of raised bog that includes both areas of high bog and cutover bog.

The site consists of one dome of high bog, fringed with areas of cutover bog, scrub and low-lying agricultural land. Although the bog surface is relatively dry, the cover of bog mosses is good. However, the typical hummock/hollow topography of a raised bog is poorly-developed. The area of cutover associated with this bog is quite limited, and much of it has been reclaimed for agriculture or overgrown with scrub.

This high bog is an example of a Midlands Raised Bog, with species such as Ling Heather (*Calluna vulgaris*), Cross-leaved Heath (*Erica tetralix*), Bog Asphodel (*Narthecium ossifragum*), Carnation Sedge (*Carex panicea*) and Cottongrass species (*Eriophorum* spp.). Other species found here include Cranberry (*Vaccinium oxycoccos*), Bog-rosemary (*Andromeda polifolia*) and Deergrass (*Scirpus cespitosus*). Bog mosses found on the site include *Sphagnum papillosum*, *S. capillifolium* and *S. imbricatum*; a number of lichens (*Cladonia* spp.) are also found. The cutover areas of the site are mainly dominated by Downy Birch (*Betula pubescens*) and/or Gorse (*Ulex europaeus*) scrub, or by areas of Purple Moor-grass (*Molinia caerulea*) and Soft Rush (*Juncus effusus*). There are also areas of Bracken (*Pteridium aquilinum*) and Blackberry (*Rubus fruticosus* agg.).

Current landuse on the site consists of some peat-cutting around the edge of the high bog. In the past this occurred in localised areas at the south-east, west and north-east of the bog. However, peat-cutting has decreased, and is now restricted to two areas at the north-east and south. The older areas of cutover bog have been reclaimed for agriculture (at the north-east and south-west), and scrub or rough grassland have developed on other sections. Damaging activities associated with this landuse include drainage and burning. The site appears to be subject to regular episodes of burning, with most of the surface having been subjected to burning within the past decade. A recent fire has damaged two areas of the bog at the northern side. Recurrent burning at the site is having a drying effect on the bog. These are all activities that have resulted in loss of habitat and damage to the hydrological status of the site, and pose a continuing threat to its viability. There has also been recent drainage on the high bog, involving the excavation of numerous shallow drains across the surface of the site. However, these are already infilling with vegetation and rewetting is occurring in the centre of the bog.

Clonydonnin Bog NHA is a site of considerable conservation significance comprising as it does a raised bog, a rare habitat in the E.U. and one that is becoming increasingly scarce and under threat in Ireland. Ireland has a high proportion of the total E.U. resource of raised bog (over 50%) and so has a special responsibility for its conservation at an international level.

**Lough Derravaragh NHA (000684)**  
**SITE NAME: Lough Derravaragh NHA**

**SITE CODE: 000684**

Lough Derravaragh is located approximately 12 km north of Mullingar town mainly in the townlands Clonava, Derrya, Kiltoom, Donore, Ballynakill, Streamstown and Knockbody in Co. Westmeath. The majority of the site comprises the lake, but it also includes a variety of wetland, grassland and woodland habitats. The site includes a small area of raised bog. The site is bounded in the north-west by the River Inny.

The River Inny, which is a major tributary of the River Shannon, flows into and out of Lough Derravaragh at its north-west end. At this end, the lake is wide and shallow and the raised bog and cutover is found in this area. Lough Derravaragh is shallow and its water is hard with an alkaline pH. There is only a small area of raised bog in the site, but formerly it comprised a very large bog complex which extended to the north-west of the lake. Most of this has now been cutover and large areas have been reclaimed for agriculture. The remaining area of bog has hummock/hollow complexes but no pools. Coniferous forestry has been planted on the high bog and a section of cutover. Cutover is found all around the high bog and there is also a separate small area of old cutover 2.5 km south of the raised bog.

Much of the high bog has vegetation typical of a Midland Raised Bog, with such species as Ling Heather (*Calluna vulgaris*) and Hare's-tail Cottongrass (*Eriophorum vaginatum*). The hummock-forming bog moss *Sphagnum papillosum* has been recorded on the high bog as has the more scarce *S. imbricatum*. Overall, *Sphagnum* covers around one third of the high bog area and the centre of the bog is wet with standing water in places. The aquatic bog moss *S. cuspidatum* has been recorded in the hollows on the bog. Ling Heather and Hare's-tail Cottongrass are common on the hummocks as are lichens (*Cladonia* sp.). There are dried out channels on the bog which are colonised by algae, Deergrass (*Scirpus cespitosus*) and lichens. Coniferous forestry has been planted on the western side of the high bog and on adjoining areas of cutover. On the cutover in the south-east, south and north of the site of the site there are areas of Downy Birch (*Betula pubescens*) woodland, with patches of Gorse (*Ulex europaeus*) scrub in between.

A notable feature of Lough Derravaragh is the range of Charophytes (Stoneworts) that occur in the lake; to date eight species have been recorded here, several of which have a restricted range in Ireland. Around the lake margin, a range of habitats have been created as a result of drainage of the River Inny. At the western end are extensive reed beds and swamps dominated by Common Reed (*Phragmites australis*) with scattered stands of Downy Birch and willows (*Salix* spp.). Elsewhere, there is freshwater marsh vegetation dominated by sedges (*Carex* spp.) and often tussock-forming grasses such as Tufted Hair-grass (*Deschampsia cespitosa*) and fescues (*Festuca* spp.), with a range of flowering herbs including Nodding Bur-Marigold (*Bidens cernua*) and Trifid Bur-Marigold (*Bidens tripartita*). The lakeshore is a mineral-rich substrate and several plant species of poor fen habitats occur in abundance, such as Black Bog-rush (*Schoenus nigricans*) and Long-stalked Yellow-sedge (*Carex lepidocarpa*). Knockeyon and the other hills around the south-eastern end of the lake support deciduous woodland which is comprised mostly of native species. Hazel (*Corylus avellana*), Rowan (*Sorbus aucuparia*), Ash (*Fraxinus excelsior*) and Sessile Oak (*Quercus petraea*) are abundant. Exotic species occur occasionally, including Beech (*Fagus sylvatica*).

Lough Derravaragh is an important site for wintering waterfowl, and is of particular note as a site for geese, swans and diving duck. It is a traditional haunt for the internationally important midland flock of Greenland White-fronted Geese (which also use Loughs Iron, Owel and Ennel). This flock, whose numbers usually range between 300 and 400 birds, use the lake mainly for roosting purposes. Counts for principal waterfowl species over the five winters 1995/96 to 1999/00 are as follows (figures are average maxima): Little Grebe 42, Great Crested Grebe 34, Cormorant 34, Mute Swan 159, Whooper Swan 102, Greenland White-fronted Goose 409, Wigeon 207, Teal 52, Mallard 195, Pintail 6, Shoveler 12, Pochard 3129, Tufted Duck 1,073, Goldeneye 46, Coot 1,358, Golden Plover 158 and Lapwing 1,079. The populations of Little Grebe, Mute Swan, Whooper Swan, Pochard, Tufted Duck and Coot are

of National Importance. At times, the Pochard population, which is one of the largest in the country, has exceeded the threshold for International Importance (i.e. 3,500).

This site regularly supports nationally important populations of six species, and at times is used by the internationally important population of Greenland White-fronted Geese which is based in the region. Three of the species which occur at the site (Greenland White-fronted Geese, Whooper Swan, Golden Plover) are listed on Annex I of the E.U. Birds Directive. The rare Charophyte *Chara denudata*, has been recorded in Lough Derravaragh and the Red Data Book species Otter and Irish Hare have also been noted from the site.

Current landuses on the site include active peat-cutting, agriculture, forestry, fishing, hunting and leisure activities. On the southern margins of the high bog there is a small area of active peat-cutting. There are only a small number of agricultural fields within the site, with a few on reclaimed cutover. There is coniferous forestry on a small section of high bog and cutover. Damaging activities associated with these landuses include drainage throughout the site and burning of the high bog. The lake is an important amenity for anglers, as it holds a population of Brown Trout. Knockbody Wood is used for shooting Pheasant. Local groups use the lake for canoeing and watersports. Parts of the site have also been used for dumping and as an encampment. These activities have resulted in the loss of habitat and damage to the hydrological status of the site, and pose a threat to its viability.

Lough Derravaragh NHA is a site of considerable conservation significance, including as it does, a raised bog, a rare habitat in the E.U. and one that is becoming increasingly scarce and under threat in Ireland. The site supports a good diversity of raised bog microhabitats, including hummocks and hollows. Ireland has a high proportion of the total E.U. resource of the raised bog (over 50%) and so has a special responsibility for its conservation at an international level. Lough Derravaragh itself is of importance for its aquatic flora and fauna and for its marginal wetland habitats. It is also of major ornithological importance and is designated a Special Protection Area under the E.U. Birds Directive.

#### **Wooddown Bog NHA (000694)**

**SITE NAME: Wooddown Bog NHA**

**SITE CODE: 000694**

Wooddown Bog NHA is situated approximately 4km east of Mullingar in the townlands of Curraghmore, Macetown and Wooddown in Co. Westmeath. The site comprises a raised bog that includes both areas of high bog and cutover bog.

The site consists of a Midlands Raised Bog type, which has developed in a basin. The bog has good hummock/hollow microtopography but few pools. There is a small soak area situated close to the northern edge of the high bog. This area also supports a low canopy of Downy Birch (*Betula pubescens*) woodland. A small fen is located to the south-west of the bog. The cutover supports humid grassland, Birch and Gorse (*Ulex europaeus*) scrub and woodland. There appears to be a flush on the cutover off the northern margin of the high bog.

Much of the high bog has vegetation typical of a Midland Raised Bog. Ling Heather (*Calluna vulgaris*), Deergrass (*Scirpus cespitosus*) and the bog moss *Sphagnum capillifolium* are the dominant species on the bog. Other common species include Bog Asphodel (*Narthecium ossifragum*), Cross-leaved Heath (*Erica tetralix*) and Common Cottongrass (*Eriophorum angustifolium*). Midland Raised Bog indicators include Bog-rosemary (*Andromeda polifolia*), Cranberry (*Vaccinium oxycoccos*) and bog moss *Sphagnum magellanicum*.

There are only a few pools on the bog, which is very dry. These pools support the bog moss *Sphagnum cuspidatum*, Common Cottongrass and White Beaked-sedge (*Rhynchospora alba*). There is good hummock/hollow microtopography where burning has not occurred. The hummocks comprise bog mosses, including *Sphagnum capillifolium*, Crowberry (*Empetrum nigrum*), Ling Heather and *Cladonia* Lichens

There is a flush and soak system on the northern margin of the highbog, which supports Downy Birch woodland with an understorey of Purple Moor-grass (*Molinia caerulea*). Bog Myrtle (*Myrica gale*), Meadowsweet (*Filipendula ulmaria*), the bog mosses *Sphagnum palustre*, *S. recurvum* var *tenue* and the rare *S. fimbriatum* are also found in the flush.

To the south is an area of fen, which supports Long-stalked Yellow Sedge (*Carex lepidocarpa*), Common Sedge (*C. nigra*), Bottle Sedge (*C. rostrata*), Water Mint (*Mentha aquatica*) and Marsh Cinquefoil (*Potentilla palustris*).

Birch and mixed woodland occur on the north and north-east margin of the high bog on the cutover. The Birch woodland to the north of the site has Ling Heather, Bilberry (*Vaccinium myrtillus*) and the bog mosses *Sphagnum palustre* and *S. capillifolium*. The woodland to the north-east also supports Sycamore (*Acer pseudoplatanus*), Elder (*Sambucus nigra*) and Bracken (*Pteridium aquilinum*).

The cutover, which contains areas of old peat cutting and active peat cutting, also supports Birch and Gorse scrub, flush vegetation, humid grasslands and forestry. Grassland is present on mineral soil to the west of the site.

Current landuse on the site includes active peat-cutting in the north-east and south-east of the site. Afforestation occurs on high bog and cutover to the east and on cutover to the south-east. Areas of cutover have been reclaimed for agricultural purposes around the site. The grassland is used for grazing. Damaging activities associated with these landuses include drainage and burning of the high bog. These are all activities that have resulted in loss of habitat and damage to the hydrological status of the site, and pose a continuing threat to its viability.

Wooddown Bog NHA is a site of conservation significance comprising as it does a raised bog, a rare habitat in the E.U. and one that is becoming increasingly scarce and under threat in Ireland. This site supports a good diversity of raised bog microhabitats, including hummock/hollow complexes, a soak system and flushes, as well as a number of scarce plant species. Ireland has a high proportion of the total E.U. resource of raised bog (over 50%) and so has a special responsibility for its conservation at an international level.

#### **Lough Garr Bog NHA (001812)**

**SITE NAME: Lough Garr Bog NHA**

**SITE CODE: 001812**

Lough Garr Bog NHA is located approximately 16 km north-west of Mullingar on the main Longford road, in the townlands of Corydonnellan, Cappagh and Joanstown, Co. Westmeath. The site comprises of a mosaic of habitats which include a small raised bog, marsh, wet woodland, humid grassland and dry grassland. The site is bounded by a main road to the west and local roads to the south and east.

The raised bog on the site consists of two areas of high bog, which have been divided by a bog road. The bog surface is relatively dry. There is a flush located in the south-west section of the high bog and a marsh occurs to the east of the site in what was once Lough Garr lake. Cutover is found all around the north, west and south of the site and along the bog road. Cutover supports wet woodland, scrub and humid grassland.

Much of the high bog has vegetation typical of a Midland Raised Bog, mainly dominated by Ling Heather (*Calluna vulgaris*). There is frequent Crossed-leaved Heath (*Erica tetralix*), Deergrass (*Scirpus cespitosus*), Bog Asphodel (*Narthecium ossifragum*) and White-beaked sedge (*Rhynchospora alba*). The bog mosses *Sphagnum capillifolium*, *S. tenellum* and *S. magellanicum* are also present. The midland indicator species Bog-rosemary (*Andromeda polifolia*) and the bog moss *Sphagnum magellanicum* are also found on the bog. There are no pools on the bog but there is a sizeable (5.5 ha) flush to the south-west of the site. The south-eastern lobe of the high bog and adjoining cutover has been afforested.

Cutover areas of the bog support wet grassland, dominated by Purple Moor-grass (*Molinia caerulea*), with Tormentil (*Potentilla erecta*), Sheep's-fescue (*Festuca ovina*), Common Sorrel (*Rumex acetosa*), Sweet Vernal-grass (*Anthoxanthum odoratum*), Soft Rush (*Juncus effusus*) and Broad Buckler-fern

(*Dryopteris dilatata*). Along the south-west margin of the site there are patches of wet woodland on cutover with Downy Birch (*Betula pubescens*), Goat Willow (*Salix caprea* agg) and Eared Willow (*Salix aurita*). The understorey is dominated by Bramble (*Rubus fruticosus* agg.), Bracken (*Pteridium aquilinum*) and Purple Moor-grass. Heathy scrub areas are dominated by Gorse (*Ulex europaeus*), Downy Birch and Ling Heather.

An area of species-rich wet marsh occurs in a very wet lagg area in the cutover located on the south-west of margin of the site. Creeping Bent (*Agrostis stolonifera*) and Brown Sedge (*Carex disticha*) are the dominant species with Marsh Cinquefoil (*Potentilla palustris*), Meadowsweet (*Filipendula ulmaria*), Common Valerian (*Valeriana officinalis*), Jointed Rush (*Juncus articulatus*), Water Mint (*Mentha aquatica*), Common Marsh-bedstraw (*Galium palustre*), Soft Rush and Devil's-bit Scabious (*Succisa pratensis*).

The wet marsh with floating scraw which occupies the area that was once Lough Garr, supports homogeneous vegetation which is dominated mainly by Creeping Bent, Cowbane (*Cicuta virosa*) and Bottle Sedge (*Carex rostrata*). Other common species include Marsh Willowherb (*Epilobium palustre*), Water Horsetail (*Equisetum fluviatile*), Bulrush (*Typha latifolia*), Cuckooflower (*Cardamine pratensis*), Common Marsh-bedstraw, Marsh-marigold (*Caltha palustris*) and Branched Bur-reed (*Sparaganium erectum*). Common Reed (*Phragmites australis*) and Yellow Iris (*Iris pseudocarus*) occasionally form small dominant patches. Other species present include Nodding Bur-marigold (*Bidens cernua*) and Greater Spearwort (*Ranunculus lingua*). There is luxuriant moss cover, which include Calliergon giganteum and Calliergonella cuspidata. To the west of the marsh there is a slightly drier area with Devil's-bit Scabious, Wild Angelica (*Angelica sylvestris*), Yorkshire-fog (*Holcus lanatus*), Common Valerian, Bottle Sedge, Bogbean (*Menyanthes trifoliata*), Water Horsetail and Common Sorrel. This vegetation grades into the Downy Birch wet woodland by the high bog .

The transitional zone between the marsh and the high bog has an interesting vegetation composition. Downy Birch and Eared Willow form a patchy canopy over Bilberry (*Vaccinium oxycoccos*), Crowberry (*Empetrum nigrum*) and the bog moss *Sphagnum capillifolium*. Jointed Rush can be locally abundant. Ling Heather, Devils-bit Scabious, Bogbean and Water Horsetail are also found here. Mosses found in this habitat include *Rhytidiadelphus squarrosus* and *Pleurozium schreberi*.

Current landuse on the site includes forestry, peat-cutting, dumping and grazing. There is limited peat-cutting along the bog road and most of the cutover has been abandoned. The south-east of the site, including high bog and cutover, has been afforested. Damaging activities associated with these landuses include drainage and burning of the high bog. Dumping takes place on the site, particularly by the road which runs through the centre of the bog. These activities have resulted in loss of habitat and damage to the hydrological status of the site, and pose a continuing threat to its viability.

Lough Garr Bog NHA is a site of considerable conservation significance comprising as it does a raised bog, a rare habitat in the E.U. and one that is becoming increasingly scarce and under threat in Ireland. There is an interesting transition zone between marsh and high bog on this site which supports a good range of plant species. Ireland has a high proportion of the total E.U. resource of raised bog (over 50%) and so has a special responsibility for the conservation of this habitat at an international level.

### **Milltownpass Bog NHA (002323)**

**SITE NAME: Milltownpass Bog NHA**

**SITE CODE: 002323**

Milltownpass Bog NHA is located 1 km north-east of Milltownpass, in the townlands of Pass of Kilbride and Claremount or Cummingstown in Co. Westmeath. The site comprises a raised bog that includes both areas of high bog and cutover bog and can be accessed from the local road off the N6 to the east of the site.

This bog has pools present and is wet and quaking in places. The wet areas are formed by re-wetting of depressions on the high bog surface caused by subsidence. There is very little drainage on the high bog



and no forestry. Cutover is found all around the high bog margins with encroaching scrub and a forestry plantation. Broad-leaved woodland occurs to the west of the site.

Much of the high bog has vegetation typical of a Midland Raised Bog, consisting of Ling Heather (*Calluna vulgaris*), Hare's-tail Cottongrass (*Eriophorum vaginatum*), White Beak-sedge (*Rhynchospora alba*), Cross-leaved Heath (*Erica tetralix*), Bog Asphodel (*Narthecium ossifragum*), Cranberry (*Vaccinium oxycoccos*) and Bog-rosemary (*Andromeda polifolia*). There is some encroachment by Birch (*Betula pubescens*) at the northern high bog margin with some scattered Scots Pine (*Pinus sylvestris*). In general the high bog is wet with the bog mosses *Sphagnum capillifolium*, *S. subnitens* and *S. papillosum* present. Other species present include Deergrass (*Scirpus cespitosus*) and the lichens *Cladonia portentosa*, *C. uncialis*, *C. fimbriata*, *C. crispata* and *C. fleurciana*. The abundance of lichens is indicative of the absence of recent burning. The vegetation is quite hummocky, due to drying out and there are old dry hummocks of Ling Heather with Cranberry and the mosses *Dicranum majus* and *Hypnum jutlandicum*. The liverwort *Odontoschisma sphagni* occurs among *Sphagnum* hummocks.

Towards the centre of the high bog there is a dry ridge dominated by Ling Heather, Bog Asphodel and Deergrass with some Cottongrass. North of this ridge there is a wet depression dominated by Ling Heather, Cottongrasses, Cross-leaved Heath and lichens. There are small pools and wet hollows with the bog moss *Sphagnum cuspidatum* and small hummocks of the bog mosses *S. papillosum*, *S. capillifolium* and *S. magellanicum*. Some hollows are dominated by Bog Asphodel and the hummocks are overgrown by the liverwort *Odontoschisma sphagni*. The small pools are drying out and in-filling with Cottongrass. Round-leaved Sundew (*Drosera rotundifolia*) is present along with the bog moss *Sphagnum tenellum* and large lawns of *S. magellanicum*. These occur in wet quaking areas caused by re-flooding from subsidence.

South of the ridge, the high bog slopes away towards the road and grades into a very wet and quaking area that has numerous pools and extensive lawns of bog moss (*S. magellanicum*). This area is dominated by Cottongrasses and Ling Heather over abundant *Sphagnum*, with Bog Asphodel and White Beak-sedge dominated hollows. Large pools occur here with the bog moss *S. cuspidatum*. There are also flushed areas with the mosses *Aulacomnium palustre*, *Polytricum commune*, *P. alpestre*, the liverwort *Pleurozium schreberi* and Cranberry locally abundant.

The high bog is surrounded by cutover, much of which has been colonised by Birch (*Betula* spp.) scrub. There is old cutover to the north, with a thin margin of Birch wood. This cutover is dominated by bog species, especially Ling Heather and lichens. There is some active peat-cutting at the north-east margin, backed by Birch scrub on cutover, and to the west some of the cutover has been reclaimed for agricultural grassland. A small forestry plantation is present on cutover to the north-east and broadleaved woodland to the west adds to the habitat diversity of the site.

Current landuses on the site include peat-cutting, agriculture and forestry. To the east, outside the site, there is intensive commercial peat-cutting, but few damaging operations apart from reclamation of cutover to the west and small scale domestic peat-cutting to the east occur within the site. The heavily improved area of cutover at the western margin has been cleared of scrub, levelled and re-seeded. This reclamation directly adjoins the cutface. A new road has been built and further developments are planned. Damaging activities associated with these landuses include scrub clearance and drainage at the margins of the high bog. These activities have resulted in the loss of habitat, damage to the hydrological status of the site, and pose a continuing threat to its viability.

Milltownpass Bog NHA is a site of considerable conservation significance comprising as it does a raised bog, a rare habitat in the E.U. and one that is becoming increasingly scarce and under threat in Ireland. This site supports a good diversity of raised bog microhabitats, including hummocks and pools and due to its easterly location, is of biogeographical importance. Ireland has a high proportion of the total E.U. resource of raised bog (over 50%) and so has a special responsibility for its conservation at an international level.

## APPENDIX FIVE — TREES

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## Appendix Five: Trees

### Trees and woodlands in respect of which tree preservation orders are in place

Ref	Item
T.1	Trees and tree groups to south of National Secondary Route N52 at Bellview, Mullingar
T. 2	Tree groups on north shore of Lough Derravaragh at Coolure
T. 3	Trees to south of National Secondary Route N55 at Curragh, Athlone
T. 4	Trees and groups of trees on west shore of Lough Ennell at Lilliput, Dysart.
T. 5	Trees to west of National Secondary Route N52 at Bloomfield, Mullingar
T. 6	Trees at Dysart Island, Lough Ennell, Mullingar.
T. 7	Tree group on west shore of Lough Derravaragh at Monintown
T. 8	Trees to north of National Primary Route N6 at Glynn, Fardrum, Athlone
T. 9	Trees in grounds of St. Ethcens Church, Killucan
T. 10	Trees in grounds of Glebe House, Killucan
T. 11	Trees in the grounds of Cathedral of Christ the King, Mullingar
T.12	Group of trees on east side of the Royal Canal at Carey's Bridge, Mullingar
T. 13	Trees on west side of County Road No. 662 at Gaybrook, Mullingar
T. 14	Trees around south-eastern end of Lough Derravaragh
T. 15	Trees on north side of road at Lough Park
T. 16	Trees on south-west shore of Lough Bane
T. 17	Trees on Monk's Island

### Tree Register of Ireland (TROI)

Clár Crann na hÉireann

Top 25 trees in county Westmeath

(<http://www.treecouncil.ie/treeregister.html>)

- Cupressus macrocarpa (Monterey Cypress) Delvin Golf Course, Delvin: 8.40 @ 1.3 m × 20.20 m.
- Quercus robur (English/Common Oak) Belvedere House, Mullingar: 8.25 @ 0.1 m × 24.50 m.
- Fraxinus excelsior (Ash) Castlepollard: 7.35 @ 1.5 m × 28 m.
- Castanea sativa (Sweet/Spanish Chestnut) Newpass House, Rathowen: 6.96 @ 1.5 m × 18.50 m.
- Fagus sylvatica (Beech) Tullynally Castle, Castlepollard: 6.84 @ 1.5 m × 30 m.
- Fagus sylvatica (Beech) Tullynally Castle, Castlepollard: 6.54 @ 1.5 m × 30.50 m.
- Fraxinus excelsior (Ash) Tullynally Castle, Castlepollard: 6.30 @ 1.5 m × 24.50 m.
- Juglans regia (Walnut) Ballinlough Castle, Clonmellon: 6.15 @ 0.75 m × 21 m.
- Fraxinus excelsior (Ash) Tullynally Castle, Castlepollard: 6.13 @ 1.1 m × 22 m.
- Fagus sylvatica (Beech) Tullynally Castle, Castlepollard: 6.01 @ 1.5 m × 31.50 m.
- Abies alba (Silver Fir) Tullynally Castle, Castlepollard: 5.98 @ 1.5 m × 45 m.
- Abies alba (Silver Fir) Newpass House, Rathowen: 5.95 @ 1.5 m × 33 m.
- Salix alba (White Willow) Tullynally Castle, Castlepollard: 5.85 @ 1.2 m × 18.50 m.
- Fagus sylvatica (Beech) Tullynally Castle, Castlepollard: 5.75 @ 1.5 m × 32 m.
- Fagus sylvatica (Beech) Belvedere House, Mullingar: 5.70 @ 1.5 m × 26.50 m.
- Pinus radiata (Monterey Pine) Belvedere House, Mullingar: 5.50 @ 1.5 m × 36 m.
- Aesculus hippocastanum (Horse Chestnut) Kilbixey, Cavan: 5.36 @ 1.25 m × 23.70 m.
- Fagus sylvatica (Beech) Tullynally Castle, Castlepollard: 5.12 @ 1.5 m × 33.50 m.

- *Fraxinus excelsior* (Ash) Mullingar Golf Club, Mullingar: 4.95 @ 1.5 m × 21.50 m.
- *Abies alba* (Silver Fir) Newpass House, Rathowen: 4.91 @ 1.5 m × 32.50 m.
- *Aesculus hippocastanum* (Horse Chestnut) Tullyally Castle, Castlepollard: 4.77 @ 1.5 m × 26.50 m.
- *Taxus baccata* (Yew) Belvedere House, Mullingar: 4.71 @ 1.5 m × 18.50 m.
- *Taxus baccata* (Yew) Belvedere House, Mullingar: 4.60 @ 1 m × 20 m.
- *Quercus robur* (English/Common Oak) Tullyally Castle, Castlepollard: 4.58 @ 1.5 m × 35 m.
- *Taxus baccata* (Yew) Belvedere House, Mullingar: 4.52 @ 1 m × 13 m.

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T. 15	Trees on north side of road at Lough Park
T. 16	Trees on south-west shore of Lough Bane
T. 17	Trees on Monk's Island

### Tree Register of Ireland (TROI)

Clár Crann na hÉireann

Top 25 trees in county Westmeath

(<http://www.treecouncil.ie/treeregister.html>)

- Cupressus macrocarpa (Monterey Cypress) Delvin Golf Course, Delvin: 8.40 @ 1.3 m × 20.20 m.
- Quercus robur (English/Common Oak) Belvedere House, Mullingar: 8.25 @ 0.1 m × 24.50 m.
- Fraxinus excelsior (Ash) Castlepollard: 7.35 @ 1.5 m × 28 m.
- Castanea sativa (Sweet/Spanish Chestnut) Newpass House, Rathowen: 6.96 @ 1.5 m × 18.50 m.
- Fagus sylvatica (Beech) Tullynally Castle, Castlepollard: 6.84 @ 1.5 m × 30 m.
- Fagus sylvatica (Beech) Tullynally Castle, Castlepollard: 6.54 @ 1.5 m × 30.50 m.
- Fraxinus excelsior (Ash) Tullynally Castle, Castlepollard: 6.30 @ 1.5 m × 24.50 m.
- Juglans regia (Walnut) Ballinlough Castle, Clonmellon: 6.15 @ 0.75 m × 21 m.
- Fraxinus excelsior (Ash) Tullynally Castle, Castlepollard: 6.13 @ 1.1 m × 22 m.
- Fagus sylvatica (Beech) Tullynally Castle, Castlepollard: 6.01 @ 1.5 m × 31.50 m.
- Abies alba (Silver Fir) Tullynally Castle, Castlepollard: 5.98 @ 1.5 m × 45 m.
- Abies alba (Silver Fir) Newpass House, Rathowen: 5.95 @ 1.5 m × 33 m.
- Salix alba (White Willow) Tullynally Castle, Castlepollard: 5.85 @ 1.2 m × 18.50 m.
- Fagus sylvatica (Beech) Tullynally Castle, Castlepollard: 5.75 @ 1.5 m × 32 m.
- Fagus sylvatica (Beech) Belvedere House, Mullingar: 5.70 @ 1.5 m × 26.50 m.
- Pinus radiata (Monterey Pine) Belvedere House, Mullingar: 5.50 @ 1.5 m × 36 m.
- Aesculus hippocastanum (Horse Chestnut) Kilbixey, Cavan: 5.36 @ 1.25 m × 23.70 m.
- Fagus sylvatica (Beech) Tullynally Castle, Castlepollard: 5.12 @ 1.5 m × 33.50 m.

- *Fraxinus excelsior* (Ash) Mullingar Golf Club, Mullingar: 4.95 @ 1.5 m × 21.50 m.
- *Abies alba* (Silver Fir) Newpass House, Rathowen: 4.91 @ 1.5 m × 32.50 m.
- *Aesculus hippocastanum* (Horse Chestnut) Tullynally Castle, Castlepollard: 4.77 @ 1.5 m × 26.50 m.
- *Taxus baccata* (Yew) Belvedere House, Mullingar: 4.71 @ 1.5 m × 18.50 m.
- *Taxus baccata* (Yew) Belvedere House, Mullingar: 4.60 @ 1 m × 20 m.
- *Quercus robur* (English/Common Oak) Tullynally Castle, Castlepollard: 4.58 @ 1.5 m × 35 m.
- *Taxus baccata* (Yew) Belvedere House, Mullingar: 4.52 @ 1 m × 13 m.

# GLOSSARY

PART NINE

GLOSSARY

PAGE NO.

200-204





# Glossary

## **Architectural Conservation Area**

A place, area, group of structures or townscape, taking account of building lines and heights, which is of special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest, or contributes to the appreciation of protected structures.

## **Biodiversity**

The variability among living organisms on the earth, including the variability within and between species and within and between ecosystems.

## **Brownfield Sites**

An urban development site that has been previously built on.

## **Carrying Capacity**

This is the largest volume of traffic that a particular road or route can carry.

## **Catchment Area**

An area from which a place draws its population (i.e. a town, hospital or school) or the area served by a water/sewerage scheme.

## **Emissions**

Carbon Dioxide, greenhouse gas or other noxious emissions.

## **Esker**

A long narrow ridge of sand and gravel deposited by glacial meltwaters

## **External Objectives**

Objectives to which the plan must have regard, inherited from higher level plans, policies or programmes to which the plan must have regard and which are external from the SEA process for various reasons.

## **Geodiversity or geological diversity**

The diversity of minerals, rocks (whether 'solid' or 'drift'), fossils, soils, land forms and geological processes that constitute the topography, landscape and the underlying structure of the Earth.

## **GIS Geographical Information Systems**

Computer data system which holds data with reference to its geographical location and is capable of capturing, storing, analyzing, and displaying geographically referenced information.

### **Goals**

Goals are the broadest expressions of community's desires. Goals give direction to the plan as a whole. Goals are concerned with the long term, and often describe ideal situations that would result if all plan purposes were fully realised. Since goals are value-based, their attainment is difficult to measure.

### **Greenfield Sites**

A piece of open land that has not been built on.

### **Groundwater Protection**

Protection of underground source of water (groundwater aquifer). Certain developments are subject to special controls within defined areas close to aquifers.

### **Hedgerows**

A natural or semi-natural row of bushes, shrubs and/or trees forming a boundary. Hedgerows define places, act as shelterbelts, and add to biodiversity. They also offer significant wildlife habitat, including wildlife corridors which allow wild animals to move across open countryside, and provide food, nesting and roosting places.

### **Infill Development**

Refers to development taking place on a vacant or undeveloped site between other developments, i.e. an infill site.

### **Infill Site**

Small gap sites, unused or derelict land usually located in urban areas.

### **Infrastructure**

Drainage, water supplies, sewage treatment plants, sewerage networks, lighting, telephone lines, electricity supply, railways, roads, buildings, schools, community facilities and recreational facilities.

### **Landscape Plans**

A detailed plan prepared as part of a planning application, illustrating the steps the developer will take to provide hard and/or soft landscaping on the site.

### **Local Area Plan**

A Plan prepared and adopted in accordance with Section 10 of the Planning and Development Acts 2000-2006. These plans must be prepared for designated towns with a population in excess

of 2,000 persons within the functional area of the Authority. They may also be prepared for areas which the Authority considers require economic, physical and social renewal and for areas likely to be subject to large scale development within the lifetime of the plan.

### **Mitigate**

To make or become less severe or harsh

### **Monument (Recorded Monument)**

An archaeological monument protected under Section 12 of the National Monuments (Amendments) Act, 1994.

### **Natural Heritage Area (NHA)**

These are the basic areas for wild life conservation in the country with over 800 in existence. These are chosen because they are considered by the Parks and Wildlife section of the DoEHLG to be of importance in an Irish context. As yet the formal process of designation of NHAs is not complete, as the process of consultation with property owners is not complete. It is possible for a landowner to object to the designation of property.

### **Objectives**

Objectives are specific statements that carry out a plan in the short term, which are measurable benchmarks that can be used to assess incremental progress in achieving the broader purposes expressed in policies and goals.

### **Offset**

Allowance made to counteract an effect

### **Policies**

Policies are broad statements that set preferred courses of action. Policies are choices made to carry out the goals in the foreseeable future. Policies need to be specific enough to help determine whether a proposed project or program would advance community values expressed in the goals.

### **Population Density**

The number of people per unit area (hectare, square kilometre, acre, square mile) determined by dividing the number of people in an area by the size of the area.

### **Protected Structure**

A building, feature, site, or structure identified in the Development Plan as worthy of protection or preservation in accordance with Part IV of the Planning and Development Acts 2000 - 2006.

**Recycling Centre**

A centre that facilitates the recycling of plastics, glass, corrugated cardboard, newspapers and/or other recyclable goods.

**REPS**

Rural Environment Protection Schemes.

**Residential Densities**

The number of residential units per area unit (hectare, acre).

**Rural Area**

The rural area shall be defined as land located outside the development boundaries of the town and villages identified in the settlement structure in Section 2.1.2

**Salmonoid River**

Salmonoid river are those identified under the EU Freshwater Fish Directive, 78/659/EEC; there is an obligation to maintain specific water quality standards and to control pollution in these waters.

**Scoping**

The process of determining what issues are to be addressed, and setting out a methodology in which to address them in a structured manner appropriate to the plan or programme. Scoping is carried out in consultation with the appropriate bodies.

**Significant environmental effect**

Significance is a function of impact magnitude and the importance/sensitivity of the resources of the receptor.

**Special Areas of Conservation (SAC)**

Sites considered of importance at both Irish and European level. The EU habitat directive, transposed into Irish law is the legal basis for the designation of these sites. Site types can vary from bogs to woodlands to river systems/

**Special Protection Areas (SPA)**

These are primarily for the conservation of bird species, and the legal basis for their designation is the EU Birds directive. The designation is required for listed rare and vulnerable species, migratory species such as wildfowl, and for wetlands which attract large numbers of wildfowl every year.

**Strategic Environmental Assessment (SEA)**

The formal, systematic evaluation of the likely significant environmental effects of implementing a plan or programme before a decision is made to adopt the plan or programme.

### **Strategic Environmental Objectives (SEO's)**

Methodological measure against which the environmental effects of the plan can be tested. SEA objectives are distinct from the plan objectives although will often overlap. SEA Objectives are developed from, national, international and regional policy as set out in Section 2.1.3 and further development in Section 4.

### **Sustainable Development**

Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

### **Topography**

Features of a place or district, the position of its rivers, mountains, roads, buildings etc.

### **Tree Preservation Orders**

An order made by the Council for the preservation of any tree, trees, group of trees or woodlands. The order may prohibit the cutting down, topping, lopping or wilful destruction of trees, except with the consent of the County Council, which may be granted subject to conditions.

### **Vernacular**

The traditional architecture of a region, frequently developed in response to the climate, land conditions, or culture of a region.

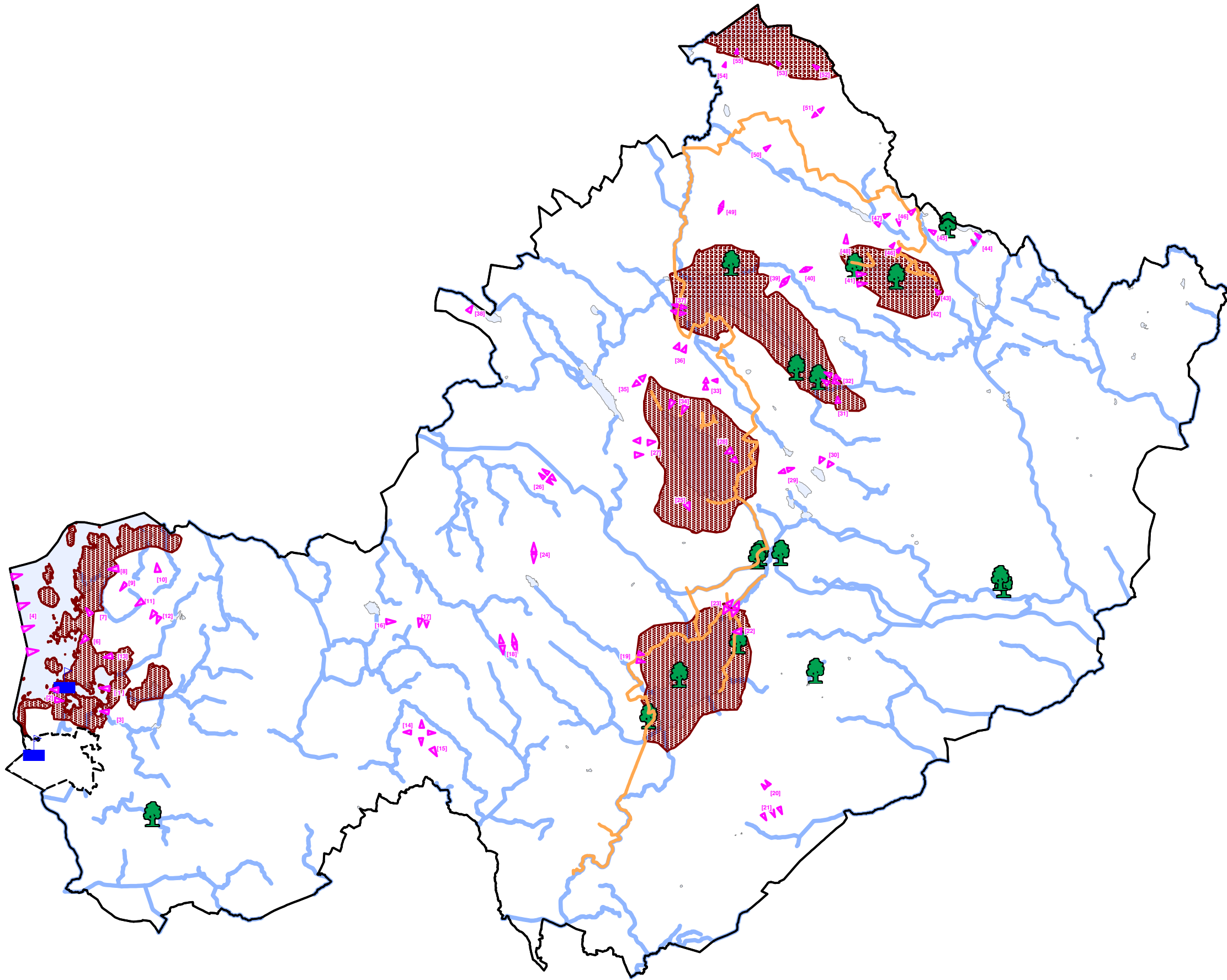
### **Water Framework Directive (WFD)**

The EU Water Framework Directive came into force in December 2000 and requires that stricter water quality regulations will have to be taken on board. It demands a more comprehensive and integrated approach to water management and will have significant implications for resources given its scope and ambitious targets. The WFD will govern all aspects of the aquatic environment including surface and groundwaters. A 16-year implementation time frame is envisaged to achieve at least 'good status' for all waters. The catchment-based approach to water quality is enshrined in the Directive and Member States are required to develop River Basin District Management Plans by 2009. Local authorities will have a key involvement in managing the RBD Projects and implementing the RBD Management Plans.

Westmeath is divided between two regions for the purposes of implementation of the Water Framework Directive. Most of the County is within the Shannon Region (ShRBD) but a portion to the east of the County; the Boyne Catchment is within the Eastern River Basin District Area (ERBD).

# SEA MAPS




- 
- 1 AMENITY & LANDSCAPE MAP
- 2 CULTURE & HERITAGE MAP
- 3 FLOOD RISK MAP
- 4 GENERAL VULNERABILITIES MAP
- 5 GROUNDWATER VULNERABILITIES MAP
- 6 LAKE VULNERABILITIES MAP
- 7 MATERIAL ASSETS MAP
- 8 NATURAL HERITAGE & HABITAT MAP
- 9 POPULATION DISTRIBUTION MAP
- 10 RIVER VULNERABILITIES MAP



**STRATEGIC ENVIRONMENTAL ASSESSMENT  
ENVIRONMENTAL REPORT FOR  
WESTMEATH COUNTY DEVELOPMENT PLAN 2008-2014  
AMENITY AND LANDSCAPE MAP**



**LEGEND**

-  WALKING ROUTES
-  BATHING WATERS
-  HIGH AMENITY AREAS
-  PROTECTED VIEWS
-  TREE PRESERVATION ORDERS
-  ATHLONE TOWN COUNCIL ADMINISTRATIVE AREA



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COUNTY BUILDING  
MOUNT ST.,  
MULLINGAR, CO WESTMEATH










PHONE: 044-9332000  
FAX: 044-9335231



# STRATEGIC ENVIRONMENTAL ASSESSMENT ENVIRONMENTAL REPORT FOR WESTMEATH COUNTY DEVELOPMENT PLAN 2008-2014 CULTURAL HERITAGE MAP



## LEGEND

-  LAKES
-  NATIONAL MOUNUMENTS IN STATE CARE
-  RECORDED MONUMENTS
-  ARCHAEOLOGICAL ZONES OF POTENTIAL
-  PROTECTED STRUCTURES
-  FORE SPECIAL HERITAGE AREA
-  UISNEACH
-  KILBIXY
-  ATHLONE TOWN COUNCIL ADMINISTRATIVE AREA



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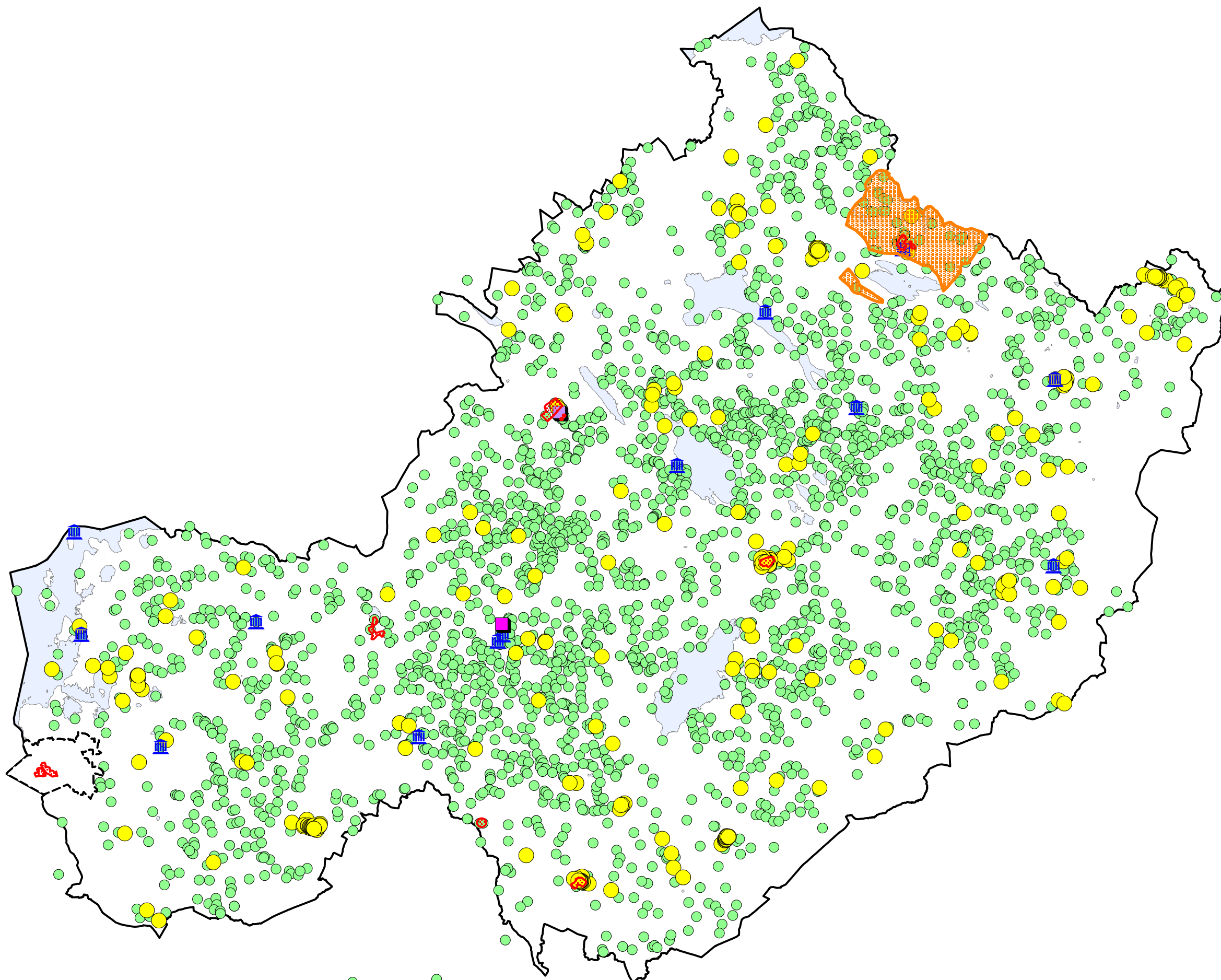
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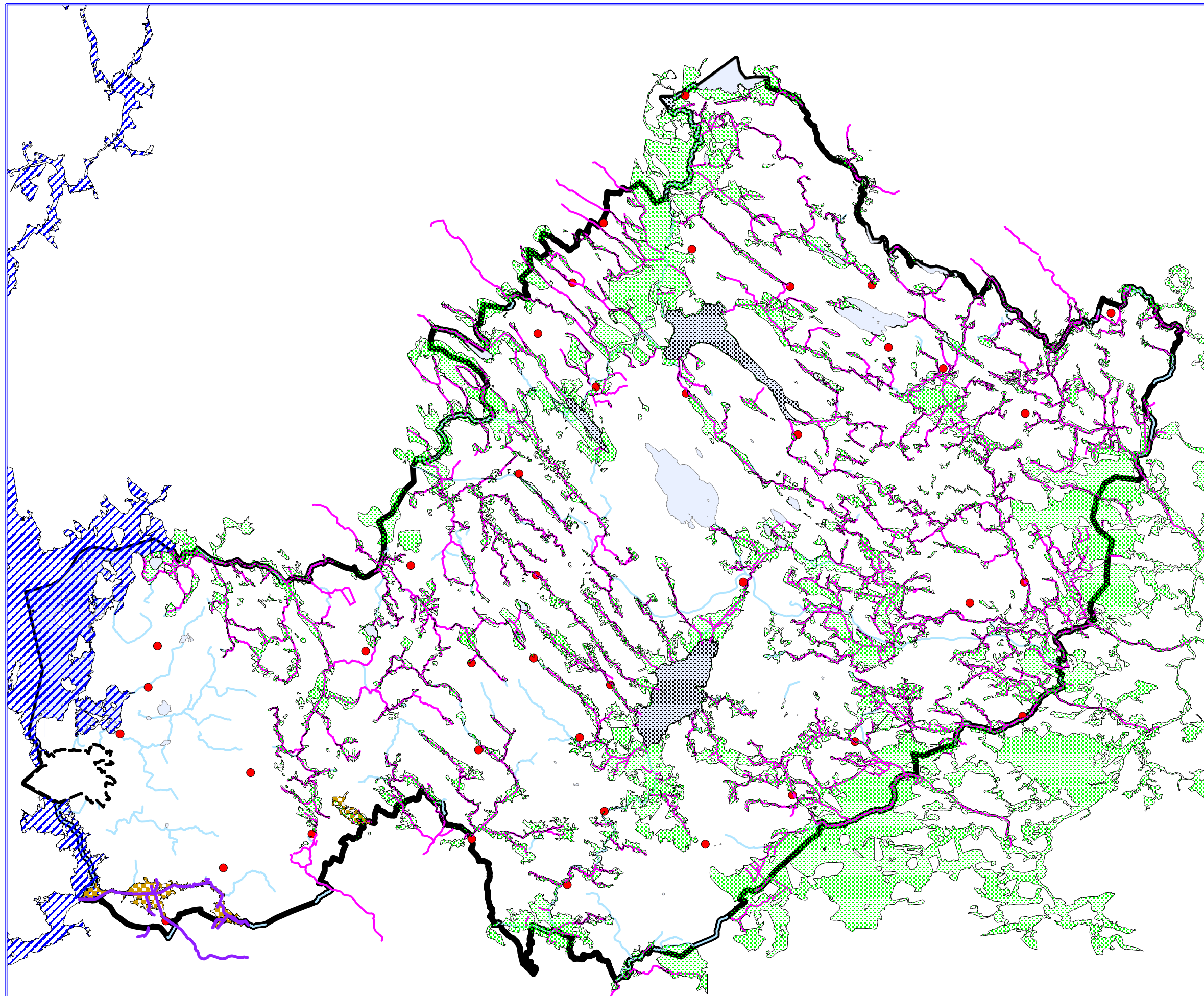
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






STRATEGIC ENVIRONMENTAL ASSESSMENT  
ENVIRONMENTAL REPORT FOR  
WESTMEATH COUNTY DEVELOPMENT PLAN 2008-2014  
FLOOD RISK MAP



LEGEND

-  LAKES
-  LAKES USED AS BUFFERING RESEVOIRS BY DRAINAGE SCHEMES
-  SHANNON FLOOD ENVELOPE
-  RIVERS
-  OPW CHANNELS
-  DRAINAGE DISTRICT CHANNELS
-  DRAINAGE DISTRICTS AREA
-  BENEFITING LAND
-  SETTLEMENTS
-  ATHLONE TOWN COUGIL ADMINISTRATIVE AREA



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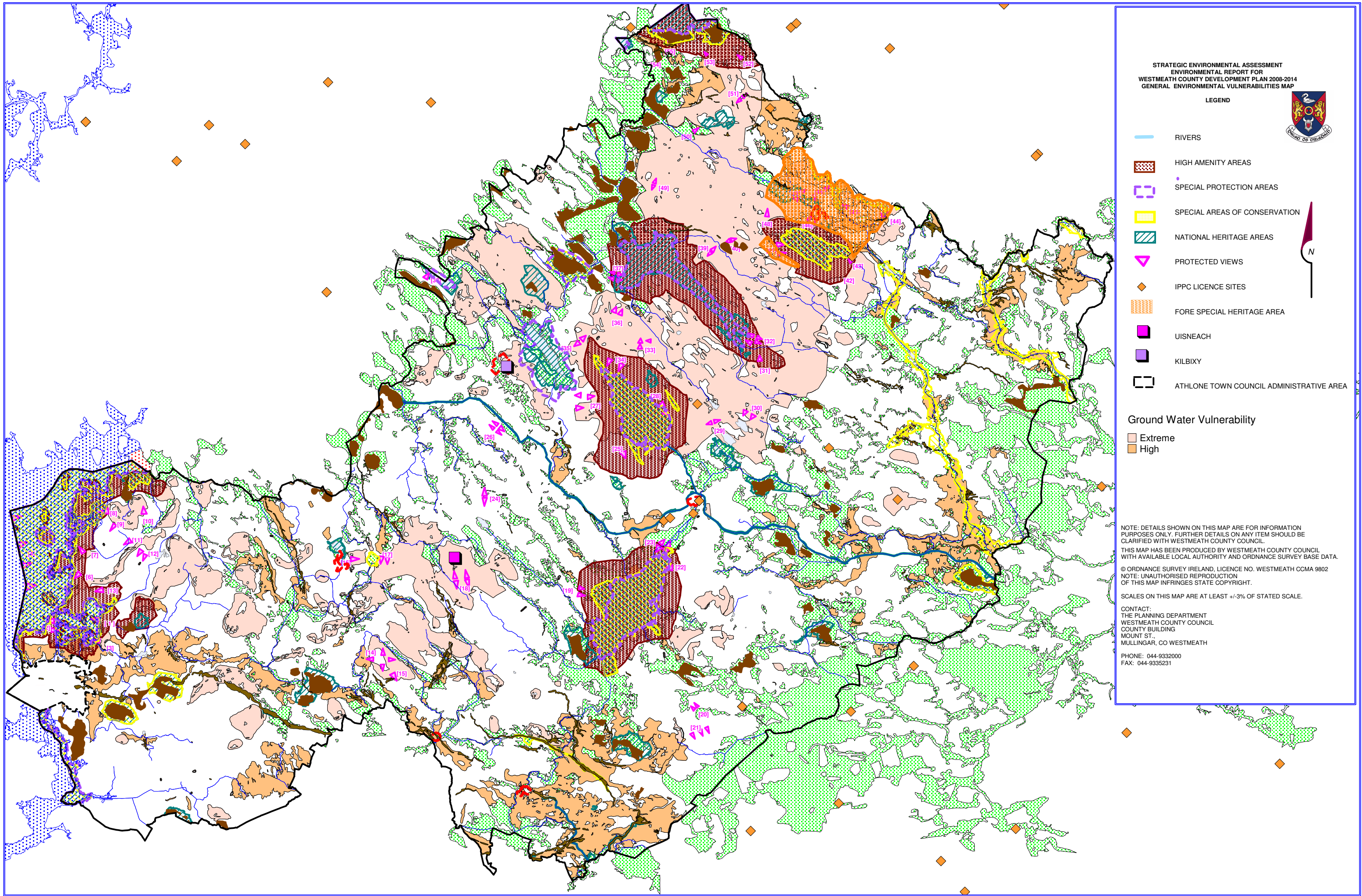
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MULLINGAR, CO WESTMEATH

PHONE: 044-9332000  
FAX: 044-9335231





STRATEGIC ENVIRONMENTAL ASSESSMENT  
ENVIRONMENTAL REPORT FOR  
WESTMEATH COUNTY DEVELOPMENT PLAN 2008-2014  
GENERAL ENVIRONMENTAL VULNERABILITIES MAP

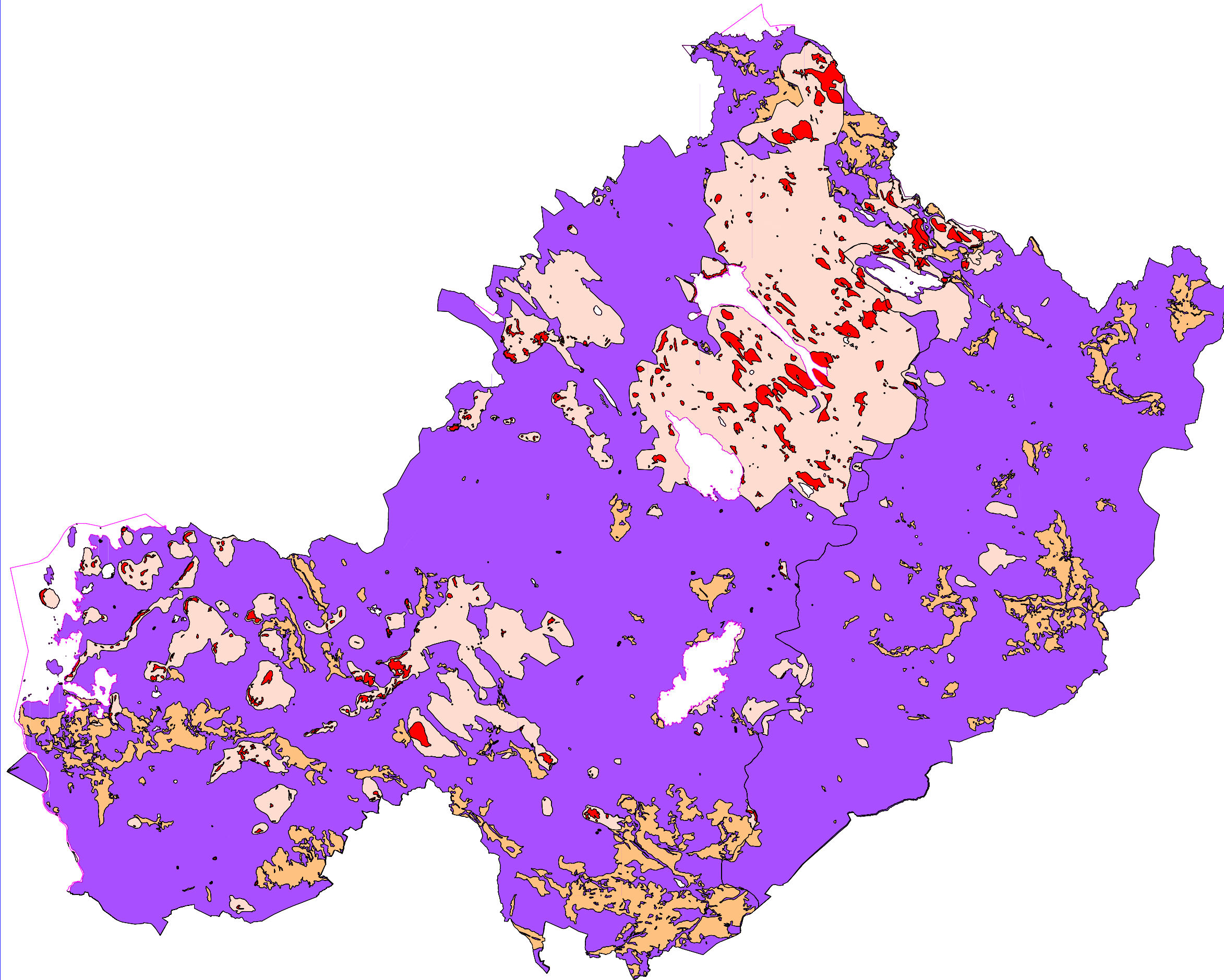
LEGEND

- RIVERS
- HIGH AMENITY AREAS
- SPECIAL PROTECTION AREAS
- SPECIAL AREAS OF CONSERVATION
- NATIONAL HERITAGE AREAS
- PROTECTED VIEWS
- IPPC LICENCE SITES
- FORE SPECIAL HERITAGE AREA
- UISNEACH
- KILBIXY
- ATHLONE TOWN COUNCIL ADMINISTRATIVE AREA

Ground Water Vulnerability

- Extreme
- High

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MULLINGAR, CO WESTMEATH  
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FAX: 044-9335231



STRATEGIC ENVIRONMENTAL ASSESSMENT  
ENVIRONMENTAL REPORT FOR  
WESTMEATH COUNTY DEVELOPMENT PLAN 2008-2014  
GROUNDWATER VULNERABILITY MAP



LEGEND

■ Extreme (Rock near Surface or Karst)	(613)
■ Extreme	(453)
■ High	(551)
■ Unclassified	(1465)
■ Water	(202)

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MULLINGAR CO WESTMEATH

PHONE: 044-9332000  
FAX: 044-9335231



STRATEGIC ENVIRONMENTAL ASSESSMENT  
ENVIRONMENTAL REPORT FOR  
WESTMEATH COUNTY DEVELOPMENT PLAN 2008-2014  
LAKE VULNERABILITY MAP  
(Lake water bodies that are at risk of failing to meet the objectives of the WFD)

LEGEND



- Significant Risk
- Probably at Significant Risk
- Probably not at Significant Risk
- Not at Significant Risk
- Rivers
- Main Settlements
- County Boundary



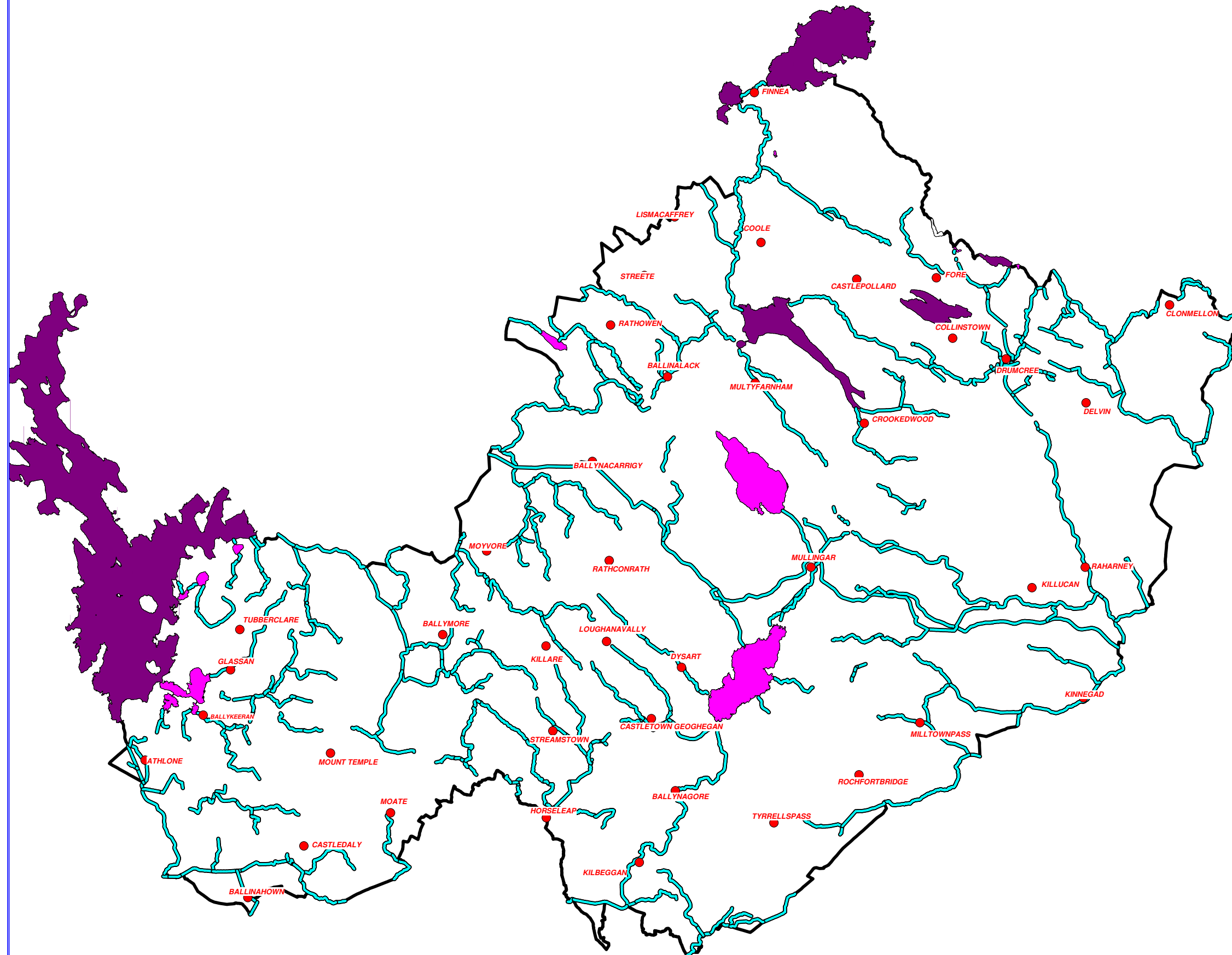
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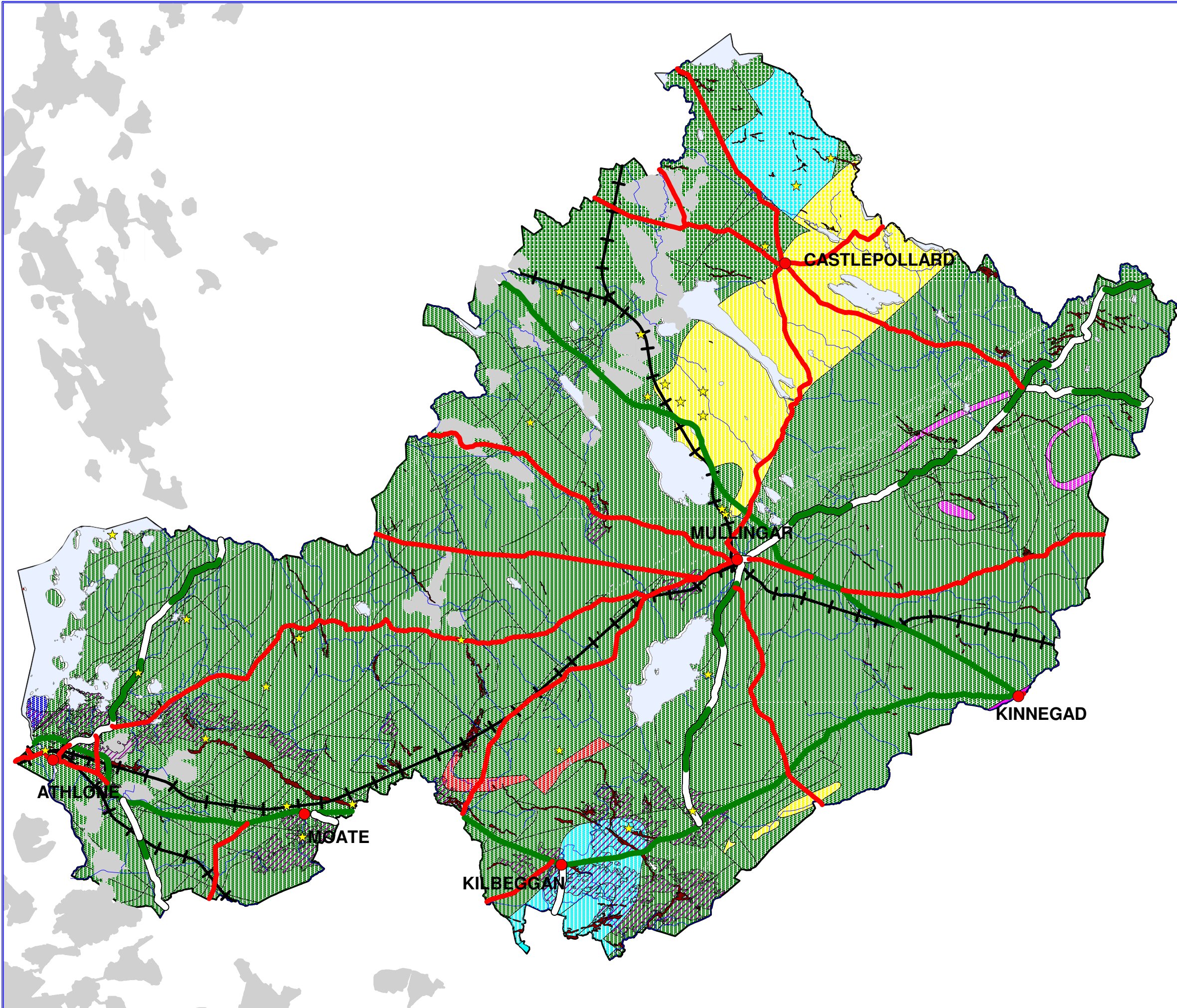
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FAX: 044-9335231





STRATEGIC ENVIRONMENTAL ASSESSMENT  
ENVIRONMENTAL REPORT FOR  
WESTMEATH COUNTY DEVELOPMENT PLAN 2008-2014  
MATERIAL ASSETS MAP  
LEGEND



- PEAT AREAS
- LAKES
- RIVERS
- ESKERS
- WATER ABSTRACTION POINTS
- NATIONAL PRIMARY ROAD
- NATIONAL SECONDARY ROAD
- REGIONAL ROADS
- MAIN TOWNS
- RAILWAY
- ATHLONE TOWN COUNCIL ADMINISTRATIVE AREA



AQUIFERS:

- GRAVEL AQUIFER
- REGIONALLY IMPORTANT KARSTIFIED BEDROCK AQUIFER
- REGIONALLY IMPORTANT KARSTIFIED AQUIFER
- PRODUCTIVE FRACTURED BEDROCK AQUIFER (LOCALLY IMPORTANT)
- MODERATELY PRODUCTIVE BEDROCK AQUIFER (LOCALLY IMPORTANT)
- BED AQUIFER - PENDING CLASSIFICATION
- POORLY PRODUCTIVE BEDROCK AQUIFER

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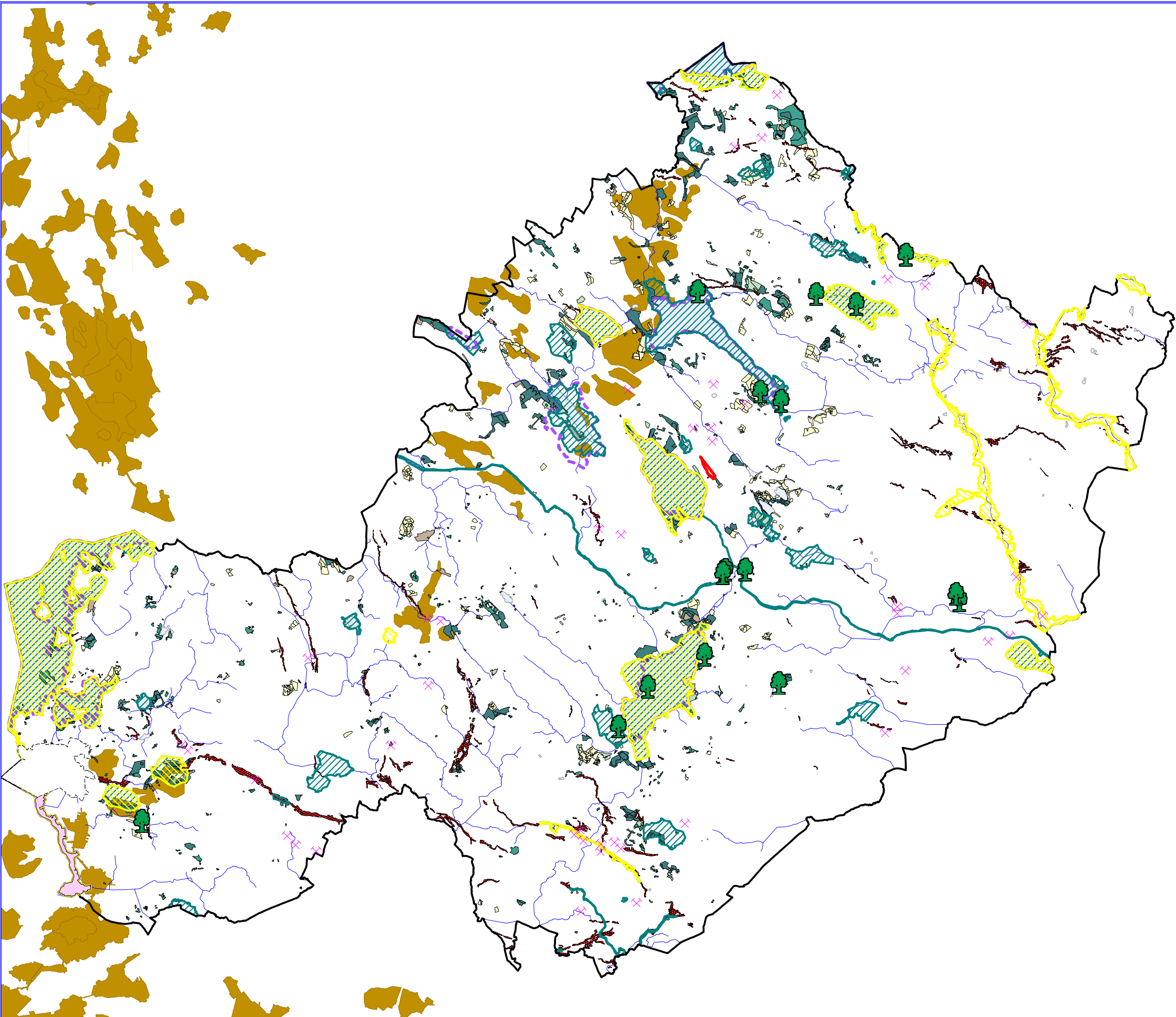
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MULLINGAR, CO WESTMEATH

PHONE: 044-9332000  
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STRATEGIC ENVIRONMENTAL ASSESSMENT  
ENVIRONMENTAL REPORT FOR  
WESTMEATH COUNTY DEVELOPMENT PLAN 2008-2014  
NATURAL HERITAGE AND HABITAT MAP



LEGEND

- NATURAL HERITAGE AREAS
- SPECIAL PROTECTION AREA
- SPECIAL AREA OF CONSERVATION
- RIVERS
- LAKES
- ESKERS
- SCRAGH BOG NATURE RESERVE
- PEATLANDS
- CALLOWS
- BROADLEAF
- CONIFER
- MIXED
- PROTECTED TREES
- QUARRIES
- ATHLONE TOWN COUNCIL ADMINISTRATIVE AREA



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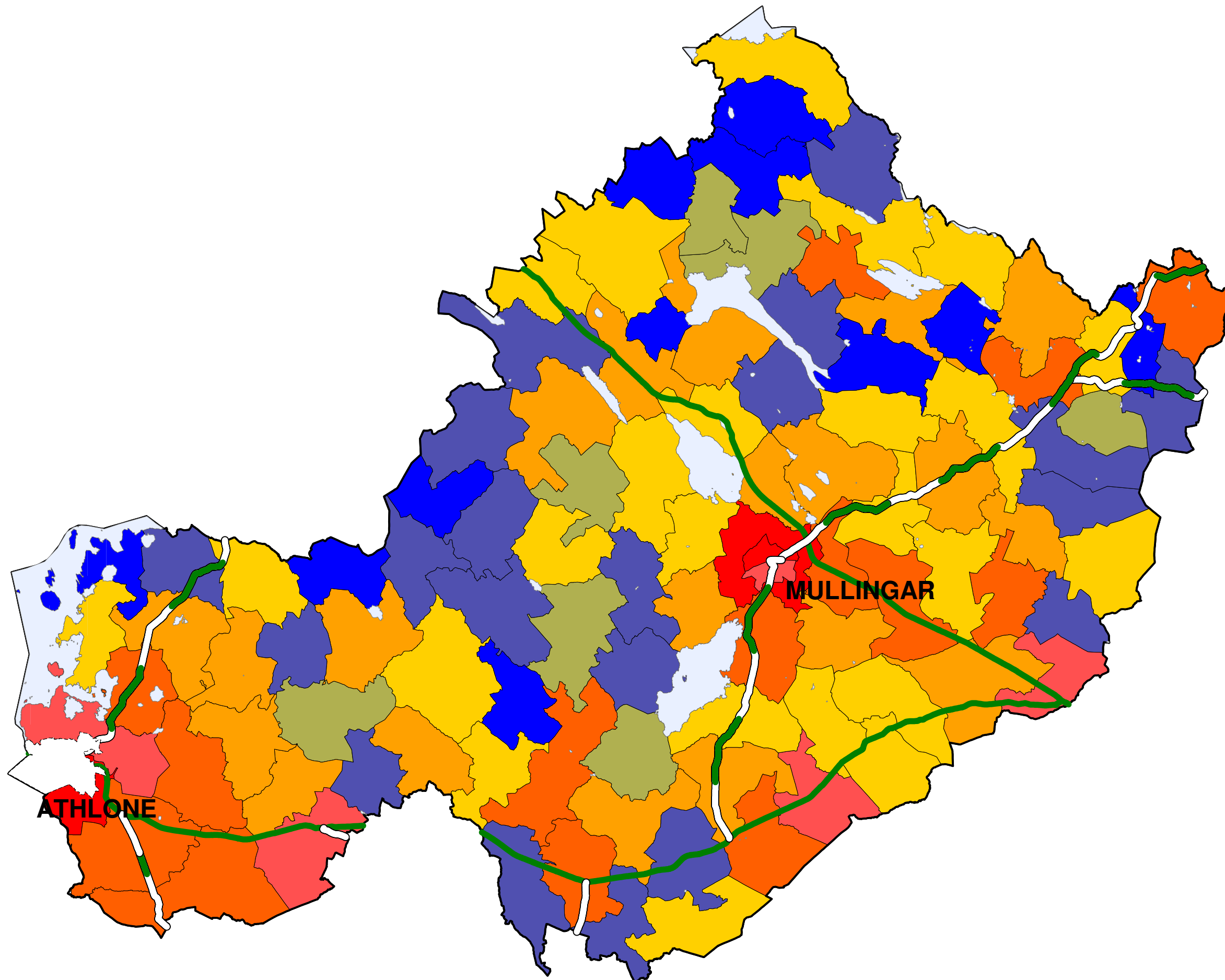
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COUNTY BUILDING  
MOUNT ST.  
MULLINGAR, CO WESTMEATH

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STRATEGIC ENVIRONMENTAL ASSESSMENT  
ENVIRONMENTAL REPORT FOR  
WESTMEATH COUNTY DEVELOPMENT PLAN 2008-2014  
POPULATION DISTRIBUTION PER ELECTROAL DISTRICT MAP

LEGEND

- NATIONAL PRIMARY ROADS
- NATIONAL SECONDARY ROADS
- LAKES
- ATHLONE TOWN COUNCIL  
ADMINISTRATIVE AREA



- 5,320 to 9,580
- 1,690 to 5,320
- 660 to 1,690
- 410 to 660
- 300 to 410
- 260 to 300
- 180 to 260
- 70 to 180

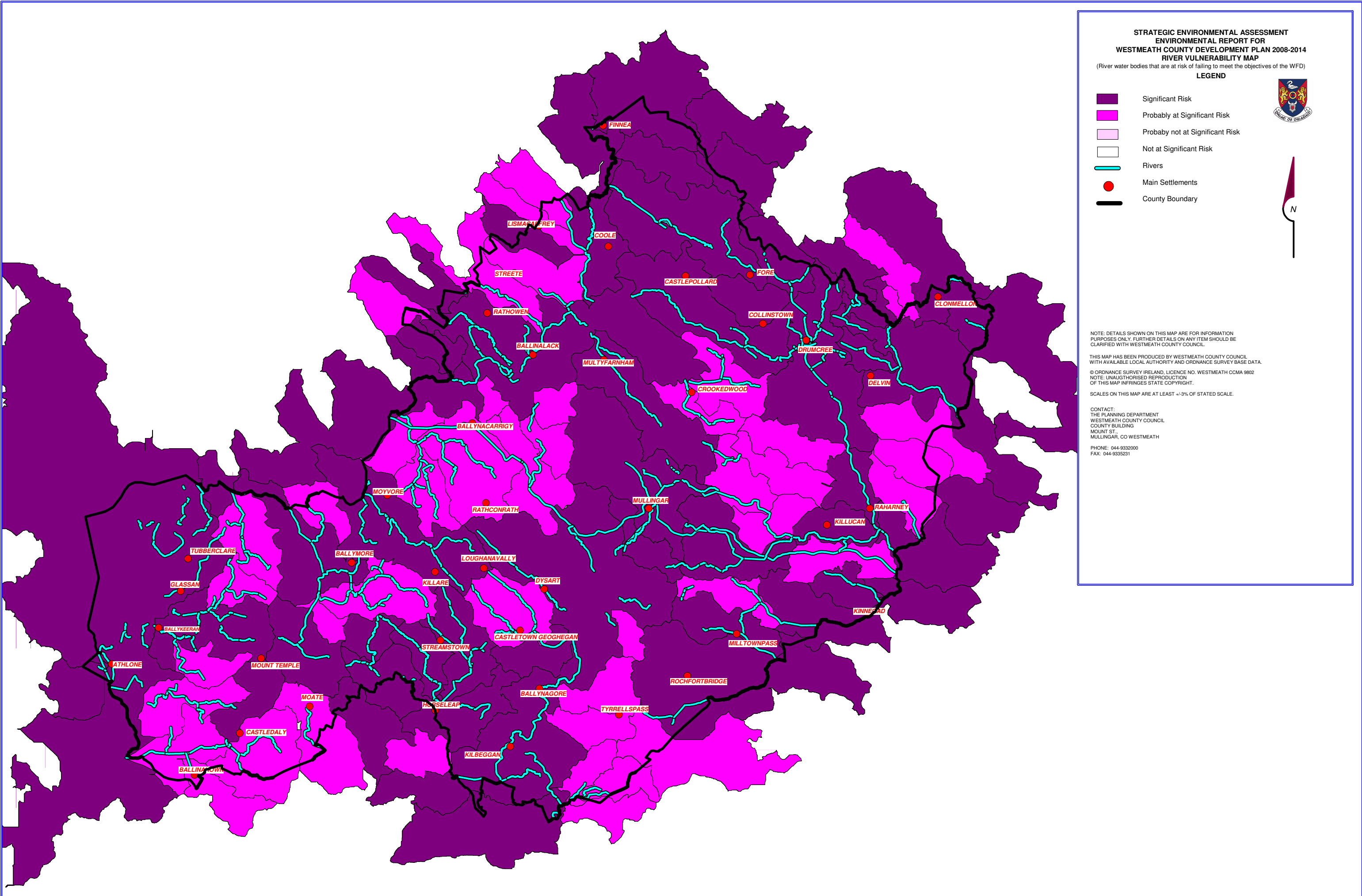
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COUNTY BUILDING  
MOUNT STREET,  
MULLINGAR CO WESTMEATH

PHONE: 044-9332000  
FAX: 044-9335231



**STRATEGIC ENVIRONMENTAL ASSESSMENT  
ENVIRONMENTAL REPORT FOR  
WESTMEATH COUNTY DEVELOPMENT PLAN 2008-2014  
RIVER VULNERABILITY MAP**

(River water bodies that are at risk of failing to meet the objectives of the WFD)

**LEGEND**

	Significant Risk
	Probably at Significant Risk
	Probably not at Significant Risk
	Not at Significant Risk
	Rivers
	Main Settlements
	County Boundary

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CONTACT:  
THE PLANNING DEPARTMENT  
WESTMEATH COUNTY COUNCIL  
COUNTY BUILDING  
MOUNT ST.  
MULLINGAR, CO WESTMEATH

PHONE: 044-9332000  
FAX: 044-9335231